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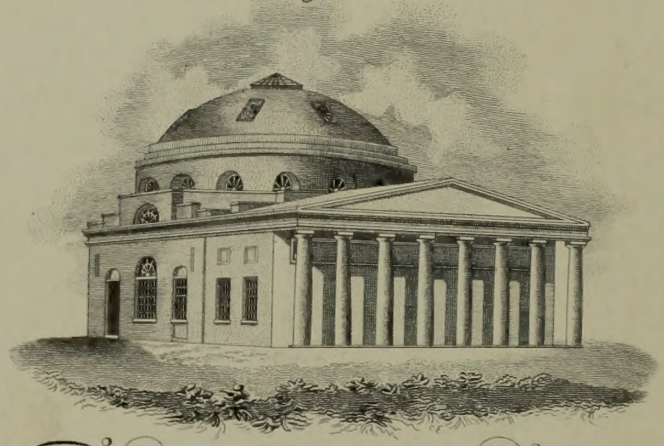

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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UNIVERSITY OF MARYLAND

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[1] Writing on both sides of each page. On left (odd) pages, writing appears upside down. Perforations show that it was previously bound on upper margin of even pages (bottom margin of odd pages). Text lost in inner margin during re-binding process.

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Author	Title	Notes
Hicks, Charles J. J.	Craniotomy	
Wise, Edward Martin	Lithotomy	
Stocks, Lawrence C.	Acute Rheumatism	(No title page)

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UNIVERSITY OF MARYLAND

THESES

1877 (a)

Egerton, ~~J.~~ James L.	Pleuritis	22p.
Crop, E. D.	Mechanical Therapeutics	16p.
Whiteside, J. ~~C.~~ Calloway	Diphtheria	16p.
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Terrell, ~~G.~~ George F.	Nasal Catarrh	14p.
Rowe, ~~G.~~ George T.	Chronic Ulcers	14p.
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(1) Odd pages upside down. Text lost in inner margin.

Thesis-

on

Pleuritis.

by

F. V. Egerton

Class 1876-77.

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"Pleuritis".

Definition- Inflammation of the pleura.

Varieties- Single or unilateral, bilateral or double; Idiopathic, Traumatic, and Secondary.

Anatomical Characters- The pleura is a serous membrane. One part of the membrane lines the firm walls of the chest; the other envelops the compressible lung. The opposed surfaces of this closed and empty sac, being freely movable one upon the other, very different effects may be produced by its inflammation. The pulmonary pleura may be glued to the costal, so as to prevent all natural movements between them, by the effusion of coagulable lymph only. Or the two surfaces may be forced widely apart by a pouring forth of serum. The most remarkable effects of pleurisy result from

the effusion of coagulable lymph or of serous liquid, or both into a shut sac. The lymph becomes organized into false membranes, which lie in close apposition with the pleura giving rise to an idea that it is thickened. I do not believe that the organization of the lymph depends solely upon the length of time that has elapsed since the time at which it was poured forth; but that it has much to do with the previous state and habit of the patient. Plastic lymph and early adhesions are to be expected in strong healthy persons, Curdy unorganizable lymph &c with a tendency to become purulent in the old, feeble, and scrofulous subjects. Serous or watery fluids are found in the pleura in numerous instances after death

which in a great many occured independently of inflammation, as from some mechanical obstacle to the circulation. constituting a true Hydrothorax. The appearance of the fluid varies considerably, it may have a slight tinge of redness, or it may be turbid or whitish like whey. When no communication has been established between the pleura and external air by means of an opening in the walls of the chest, or a pulmonary fistula leading to the trachea, the effused fluids are almost always destitute of odor. The quantity of fluid may vary from less than an ounce to several pints. It is at first lodged solely at the expense of the yielding lung, but should the quantity continue to augment other parts are displaced. The lung

may be pushed towards the vertebral column and brought to lie in the smallest possible compass. The diaphragm may be forced downwards causing a prominence in one or other hypochondrium. The heart has been so removed from its natural site, by an effusion in the left pleura, that its impulse has been seen and felt upon the right of the sternum. Or by a large effusion into the right pleura it may be carried beyond its proper limit to the left.

Symptoms. The general indications, are rigors, pain in the side, increased and accelerated respiration, short sharp cough, and fever, very much the same with those of Pneumonia and Pericarditis. But the physical will probably

establish the diffirential diagnosis) The pain that the patient feels - or the stitch in the side as it is generally called - is a very striking and characteristic symptom of the disease. but is subject to considerable variety - as to its situation, and severity. The point at which it is most commonly felt is upon a level with or somewhat below the left breast. at a point corresponding to the lateral attachments of the diaphragm. Whatever may be the situation of this pleuritic stitch, it is generally aggravated by percussion, or pressure of any kind; by deep inspiration, coughing, or lying upon the affected side. There are however exceptions to this last, as in one case I witnessed, the patient (during the first or inflammatory stage) would

have more ease by lying upon the affec=
ted side than in any other position. The
pain being very acute and continued the
patient is generally in a state of great
anxiety; making very short and imper=
fect inspirations, and will when possible,
suppress the desire to cough through fear
of aggravating the pain. While in other
the pain is not so severe, probably
felt acutely, only when a deep inspiration
is made, and is rarely augmented by
pressure or percussion. One thing however
seems clear to me, that inflammation
of membranous parts, and especially of serous
membranes, are attended with much
more pain than inflammation of other
parts. Not one of the symptoms as yet con=
sidered can be taken as pathognomonic

both when all, or several of them occur in conjunction with certain physical signs, they afford a degree of probability, indeed almost certainty of its existence.

Stages— In severe pleuritis there may be the adhesive, effusive, and suppurative stages in favorable cases the last there is the stage of resolution

Physical Signs— First among these as the one which more obviously meets the eye of the physician, is the altered conformation of the thorax. The side in which the effusion has occured being more full and prominent than the opposite one, as proven by mensuration, the enlargement upon the diseased side, is not (generally) more than one or one and a half inches, but it is necessary to bear in

minds that in most persons the right is naturally somewhat longer than the left side. The ribs and their cartilages present the condition observed in ordinary inspiration, while the intercostal spaces are pushed forwards to about a level with the ribs. Percussion indicates the presence of an effusion however slight in the thoracic cavity by diminished resonance upon the side diseased. At first the dulness is heard only at the lower portion of the chest. But should the disease continue it subsequently extends over the entire affected side. In cases of bilateral effusion the proper resonance is diminished upon both sides, depriving us of that invaluable expedient—contrasting the sounds between the two sides. Auscultation furnishes

as signs of the most satisfactory kind in the way of diagnosing the affection. Probably one of the Earliest Sounds heard is that of friction, produced by the rubbing together of the inflamed and roughened surfaces.

We also discover that the normal vesicular murmur is lessened; which I suppose depends upon the patients dilating his chest less, and of course Expanding less his lungs. As the effusion increases this sound becomes less distinct, until it finally becomes Extinct. But if we listen over the opposite lung we will generally hear puerile respiration, which seems to compensate for the loss of action in the affected lung.

While the vesicular murmur is disappearing upon the affected side, and the lung is becoming empty of air from pressure of the

increasing fluids, the bronchial sounds begin to be heard, which have been called bronchial voice or bronchial respiration, but differing somewhat from those heard in pneumonia, being modified by the nature of the substance through which they pass. The resonance of the voice is singularly modified in those whose chest is the seat of pleuritic effusion. Upon applying the ear to the diseased side we hear a quality of voice which resembles the bleating of a goat, and for this reason has been called by Laenec Aegophony. Occasionally instead of this we may hear a quivering, creaking, or discordant sound. "After all (says Dr Watson) it is but a modification of bronchophony, caused by the rapid undulations communicated to the effused liquid by the vibrations

of the bronchi and condensed pulmonary tissue. being most distinctly heard near the inferior angle of the scapula the patient being in a sitting position.

Diagnosis— Although the symptoms which enter into the clinical history of acute pleuritis are sufficiently characteristic to point to the existence of the disease, they are not, singly or collectively, in all cases sufficient for the diagnosis. The diagnosis in the first stage cannot always be made with positiveness, even with the aids of physical signs. A slight friction murmur may be discovered in this stage; of distinctly its diagnostic significance is important; it shows that pleuritis exists, and the discrimination then lies between pleuritis as a primary disease or as complicating

pneumonitis". The diagnostic sign of pneumonitis viz. the crepitant rale, if present, settles the question; but as this sign is by no means uniformly present, its absence does not authorize the exclusion of that disease. The same is true of the characteristic sputa of that disease. "It must be confessed (says Flint) that, in a certain number of cases, this differential diagnosis requires a little delay". In pleurisy we generally have sharp pain and dry cough preceding the dullness. In pneumonia the pain is of a more dull aching character. followed in most cases by crepitation, and rust colored sputa; but we cannot always ascertain the history of the case. A lung rendered solid by inflammation does not distend the thoracic cavity and produce

that separation of the ribs; obliteration of the intercostal spaces; that remarkable enlargement of the side, or displacement of the heart or other organs; some or all of which are apt to result from the collection of a large amount of fluid in one or both pleuras. The solid lung transmits the voice of the patient from the pervious bronchii to the surface of the thorax (generally) in an exaggerated degree; while these phenomena are wanting when the pleura is so filled with fluid as to make the side dull upon percussion. The vibrations of the thoracic parieties, caused by the patients voice, is generally augmented by consolidation of the lung; diminished when it is compressed by imprisoned

liquid. A patient having one lung solid is generally indifferent as to posture, the decubitus being mostly dorsal. while if ~~one last~~ one pleura be quite fills with fluid, the decubitus is generally upon or towards that side, in order to allow free motion of the sound lung; being distressed, and suffering dyspnoea if an attempt be made to lie upon the sound side. And finally by changing the position of the patient while percussing, will generally produce a corresponding change in the line of dulness should it result from pleuritic effusion; but if from pneumonia or other cause no such change will result. From intercostal neuralgia pleurisy is

generally distinguished by the absence of fever and friction sounds in the former, and the non-increase of the neuralgic pain upon inspiration.

Congestion in some rare cases may attend neuralgia; rendering the diagnosis more difficult.

In intercostal, or muscular rheumatism there is slight increase of pain in breathing deeply, but then there will generally be as much in moving the arms; the pain is much less acute and the attack is generally without fever.

Prognosis. Pleuritis is rarely fatal under early and proper treatment, though death may occur from a very excessive effusion in bilateral pleuritis or

with Empyema in the unilateral through Gradual exhaustion.

Causation— Exposure to colds is the most common exciting cause, such as atmospheric vicissitudes, or the sudden application of colds to the surface of the body. Early spring is the chief season for pleuritis. Its subjects are preferably those in the vigor of life. Organic lesions of the lungs as tubercles are frequent causes of the disease. Or it may be a consequence of blood poisoning, as in cases of Uraemia from Bright's disease, and pyemia. It may also be caused by the splintered ends of a broken rib injuring the pleura, or by a variety of punctured wounds of

the chest; constituting the varieties known as traumatic pleuritis.

Terminations. Pleuritis may sometimes be nipped in the bud at an early stage by appropriate treatment, that is prompt resolution of the incipient inflammation may be effected. The other terminations are serous Effusion, which may be gradually absorbed, the lung returning to its former state; or it may be incompletely absorbed leaving the lung in a collapsed state. Death in double pleuritis by asphyxia from an excess of fluid; and Empyemia, often, but not always fatal by slow Exhaustion.

Complications = Pneumonia, tubercular deposit, and Inflammation of the liver (Bilious pleuritis)

Sequelae— What authors call chronic pleuritis is the sequela of acute pleuritis.

Treatment— Pleuritis is one of those internal inflammations in the treatment of which, we have it within our power to adopt the most potent of all remedies for inflammation in its primary stages. I mean the withdrawal of blood. Notwithstanding there are many authors at the present day opposing such measures, I believe that in all young and vigorous subjects, attended with the general signs of venous congestion, high fever, and severe pain, venesection upon the first or second day should be

the rule. Leeches or cups may follow, or be used instead in doubtful cases. As remarked by Prof. McSherry "it is better that a few ounces of blood should be thrown into a basin than into the pleural cavity." One of the first results of inflammation is engorgement or determination to the part, and the result of the (engorgement) of the vein or capillaries of a part is the extravasation of the serous portion of the blood, through the walls of the vessels. Consequently it seems that to relieve the vessels of their superfluous blood, would be a proper remedial course.

After the above named period depletion should be local by means of cupping-

glasses or leeches followed if necessary by emolient poultices which encourage a fresh discharge from the surface, and as a result of these measures an abatement, or cessation of the pain may be confidentially expected. A very important step in the treatment is the administration of anodynes, preferably Sulphate of morphia hypodermically.

The bowels should be freely moved with some vigorous purgative, as epsom salts, followed by the use of Tartrate of antimony and potassa, in the form of about 1/8th to 1/4th grain, many practitioners add calomel 1/2 to 1 grain, every two or three hours. A formula consisting

℞ Opium gro III to VJ. Calomel gro VJ
Tartrate of antimony and potassa gro ℔ss
made into twelve powders, give
one every two or four hours in
water. When fever subsides or vom-
iting occurs the antimony should
be withdrawn; the opium & probably
calomel continued according to the
condition of the patient. Should there
be evidence of pleural effusion our
treatment should be to remove this
as soon as possible, for which various
agents may be used. Purgatives, diapho-
retics, and above all should the kidneys
be sound diuretics bring our chief
resources. A good diuretic pill said
to be useful for this condition is Dr
Baillies Composed of 1 to 3 gro blue mass.

one grain powders squills, and half a grain powder of digitalis. ~~Should~~ When the fever begins to abate we may apply a large blister over the parts affected. As a dernier resort we may draw off the fluids by means of Dieulafoy's Aspirator, which however should only be used when the patients life is in Jeopardy.

Jas L. Egerton
Session of 1876 & 77.

Mechanical-
Therapeutics

E. D. Cross
1877—

Hippocrates the father of medicine is also the father of mechanical therapeutics, and as many of his views in regard to the practice of medicine hold good until the present day in spite of the wonderful advance of medicine as a science. So also the principles he advocated in regard to the treatment of certain deformities are with but few modifications the practice of the present. His views of what should be the treatment of club foot in infancy agree with the most advanced of the profession at the present day. His

ideas that all mechanical means for the treatment of deformities should be according to nature, and should be used only to assist nature to overcome them - prores "that valuable knowledge after being discovered is often lost for Centuries." The valuable information he gave seems to have been disregarded and even among the profession totally lost sight of until the last few years - While the mineral and vegetable kingdoms have been, and are being, searched for the unknown, & the brightest lights of the profession have spent years

testing the effects of some new remedy. Mechanical therapeutics are in almost the same condition after nearly twenty three centuries have passed away. The Charlatans of Hippocrates day, are replaced by the bone-breakers and quacks of the present - and the profession have to a great extent turned Mechanical therapeutics over to the instrument-makers, most of whom know as little of "the form divine" as they do of the practice of medicine - Why should this be? Which is greatest: to heal the sick or to make the lame walk!

How many cases of deformity can be thought-of in the experience of any physician who has seen years of practice when heart and soul seems worn out with mental suffering, and existance embittered, a burden to themselves or friends, all because the time has thrown away when nature could have with mechanical assistance have overcome the defect and life at least saved from being a burden. It is in early childhood and youth that the prevention and treatment of deformities should be availed of. It is then the

greatest effects are accomplished. A club-foot should not be consigned to the undertakers for some future years. But should be remedied before the child begins to walk. A curved spine should not be neglected until age renders a cure impossible. A rupture should not be left to take care of itself until life is a burden. Wry-neck should not be looked upon as a slight affair that time will remedy. The science of medicine has advanced with such strides that there are few known diseases that cannot be controlled by the

intelligent physician whenhis
skill is promptly availed of-
and the time is not far distant-
when a deformity will be com-
-paratively rare in civilized com-
-munities- And the natural
electuger- and a certain class
of practitioners who give minute
sugar coated pills for luxation
and fractures, and the advo-
-cates of the mechanical treat=
-ment of deformities by brute
force will be placed in the same
category as the fantastic physic
of the sixteenth century. When
load stone was administered
internally and iron filings
as a plaster externally for

fracture - Science has demon-
-strated the fact that a splint
should conform to nature and
be governed by natures laws.
With such compliance there
are but few deformities that
cannot be overcome - A splint
should interfere as little as
possible with the natural
movements. Should act so as
not to cause uneasiness to
the patient, Should not be
complicated, and should
assist the deformity by aid-
-ing nature - Such a splint in
time will overcome almost
any deformity - One of the
greatest reasons for the failure

of mechanical means, is that patients & friends are not willing to wait long enough for nature's assistance - A deformity that has grown from long years of neglect - until the whole system has accommodated itself to the situation, cannot be overcome in a few months without causing a shock to the nervous system, the reaction of which is very often worse than the disease - Patients who can look for years with complacency on a case of distortion or debility in their child, will almost as soon as they have applied

to a physician for treatment become dissatisfied because he does not correct or cure in a few months the troubles caused in a very great measure by their own neglect. Until the profession educate the community up to a better knowledge of Nature requirements. The treatment of deformities and debilities will be a rich field for unscrupulousness and quackery. The conditions are very numerous where mechanical aid is the sole or principal resource of the

physician or Surgeon. It cannot be doubted that the successful treatment of spinal Curvature is impossible without mechanical aid. Attempts to invigorate the system either by medications, change of climate, regulated exercise, electricity, are all useless without some mechanical appliance to counteract the tendency to distortion. But with competent mechanism the treatment of spinal distortion is almost a certainty, and with the proper care and

attention which the patient should be directed to take- should be a certainty— In the cure of hernia mechanical support must always be the chief method of relief as the radical cure has not as yet proved a success in the great majority of cases— No question in Surgery demands greater thought than the construction of a perfect support for hernia- and in the mechanical appliance is the knowledge and skill of the educated physician more

required. To accomplish a cure or hold in check by mechanical pressure a hernia is to save the rupture from contingencies perilous to life, and to enable them to perform their duties in all conditions of life, without being influenced by a continual danger, and unfitted for all occupations calling for active exertion. The application of appliances for the control of hernia has been too long neglected by the profession and left in the hands

of those who are ignorant of the whole subject and whose knowledge of the appliance required, principally consists in the famous abortive attempts to manage an infirmity of theirown or that obtained from the circular of some one who has invented a truss that is a sure cure for every rupture. Trusses cannot be bought and worn like ready made clothing. Each rupture requires a different treatment and the injury done by the

majority of those thus afflicted, by the general application of any class of trusses, is much greater than is imagined — In the first place it is a necessity, if the patient is to derive the full benefit from the truss, that it should be accurately fitted — If the spring is not made to fit it must act imperfectly, and from neglect of this it is common to find those who have worn trusses for years that have aggravated the rupture they were intended

to control - A truss that can be controlled by a few pounds pressure when properly applied - is to be preferred with a truss the pressure of which is so great as to cause injury to the abdominal wall and produce a giving away of the wall in some other portion - All the attention on the subject seems to have been given to the pad, which is of least importance, and the fitting of each spring to each case has been neglected - While the cures on an average

over fifteen per cent. they should not fall below fifty per cent in cases under eighteen years of age - With these few & imperfect observations on mechanical therapeutics we will close. Few pursuits can have a more lofty or nobler aim, than that which tends to lessen the physical and mental sufferings of the human frame —

E. D. Crof
1877 —

Thesis -

on -

Diphtheritis,

by -

J. C. Whiteside.

Class - 76 — 77.

Diphtheritis.

This term is manifestly applied to a blood disease, in which the morbid change in the blood, has its main and characteristic local manifestation in the throat. It is commonly epidemic, and usually of an asthenic nature. It presents itself under two forms, primary and secondary. The primary is more common. The secondary occurs usually as a complication, or sequel of other affections, as measles or scarlet fever. The two forms present no difference, as to symptoms and appearance. But when occurring as a complication, or sequel, it is more severe and apt to be fatal.

Anatomical Characters.

It has the primary form of sore-throat, as the onset; as is first shown by a faint blush or redness on some part of the faucial mucous membrane; usually that part covering the tonsils, or vicinity; with a tendency to spread rapidly to other parts. The inflamed surface, in some cases, presents a deep, bright red; in others, a dusky red color. The latter indicating a vitiated state of the blood. In the course of a few hours from the onset, the entire faucial surface is involved; the mucous-membrane, becomes thickened and softened; follicles swollen, and secreting.

with more or less infiltration
into the sub-mucous tissue.
Usually within the course of one
or two days, there is presented in
one or more places, a white or
gray patch of fibrinous exudation,
which soon stiffens into a
membranous form, varying
much in consistence in diff-
-ferent cases. This constitutes
the diagnostic sign of the disease,
and may extend into the
nares, larynx, trachea, air pas-
-sages, oesophagus, or to any of
the mucous surfaces. This
pseudo-membrane adheres
firmly to the mucous surface,
and is not easily detached.

It usually varies in thickness from
1/20th to 1/6th of an inch. From its
low vitality, usually in a day or two
decomposition commences, when
the color of the exudation changes,
to a dirty brown. Sometimes it
may present a reddish tinge, due
to rupture of the capillaries. This
occurs when the inflamation is
intense, and capillaries greatly
engorged. When removed, by force,
it returns with much rapidity, a
few hours only, suffice for its complete
restoration. Such violence should never
be resorted to. Its separation is often
promoted by the formation of abundant
secretions, especially of pus, between
it and the surface on which it lies,

and penetrate. In many cases however, perhaps a majority, it does not separate in mass, but by progressive liquefaction. If this exudation occur in the larynx, or below in the air-passages, we then have all the phenomena of True croup, when the case is eminently dangerous. If upon the digestive track, its corresponding function is interfered with accordingly.

The presence under the microscope, of a confervoid growth, upon this membrane, seems yet to be an agitated question among many pathologists. I think now however, the fact is pretty generally established, that there is a peculiar vegetable growth, termed bacteria,

in all cases of true diphtheria.

Symptoms

It generally ushered in by a degree of chilliness, with rigors, slight sore-throat, swelling & tenderness of the glands below, and behind, the angle of the lower jaw; followed by fever, headache, languor, loss of appetite, & diffeculty of swallowing. At this period, the fauces, as well as the tonsils and palate, upon examination, present a swollen, and very red, or purple appearance. Respiration is accelerated in proportion to the amount of fever. Pulse varies in volume and frequency, being full and strong in the first stage, & feeble and frequent in the latter.

Generally in the course of two or three days, from inception of the disease, a fibrinous deposit of a grayish or grayish white color, is seen on one or both tonsils. The nasal-mucous-membrane may be involved; being swollen with exudation, producing a snuffling respiration. A mild commencement not unfrequently ushers in a fatal form of this disease. The temperature is generally less than in scarlet fever; usually abating in a few days, and becoming very much lowered in the advanced stage. The tongue is coated from the commencement. The bowels may be regular, but and very often constipated. If the laryngo-tracheal surface is invaded, the

cough and voice becomes hoarse and muffled; and the breathing stridulous; constituting diphtheritic croup, which is almost invariably fatal, by respiration becoming obstructed, and finally leading to extreme dyspnoea. Bretonneau states," that in more than half the fatal cases, seen by him, death was the direct result of the laryngeal affection; and in more than half the remainder, laryngeal disease was present."
Albuminuria is shown to be present in the majority of cases, most often in the severe forms. This Symptom as a rule is not unfavorable. In the majority of cases, weeks elapse before health is fully restored.

In some cases recovery may take place in a few days. So likewise in a few days, death may take place from the intensity of the diphtheritic virus. Causation Diphtheria is eminently contagious, generally occurring as an epidemic, with a special tendency to limited localization. Children are much more liable to it than adults. The majority of cases occurring between two and seven years of age. The period of incubation is usually from two to seven days. Scarlet fever and measles predispose to diphtheria. Sequelae. The patient after recovery usually has a pale and cachectic appearance, from the deficiency of red corpuscles, or the state of Spanaemia, which is slow to disappear.

The important sequel is paralysis. The muscles of the pharynx being the most frequent seat, which may render deglutition very difficult; so as to interfere seriously with nutrition. It may affect other parts, but is seldom or ever permanent. Diagnosis. made from Scarlet fever, by the presence in diphtheria of a pseudo-membrane, and the absence of the rash upon the skin, the strawberry tongue, and the peculiar brick-dust-like flush of the throat. From membranous croup it is distinguished by the commencement of a pseudo-membranous deposit about the tonsils and pharynx; while in croup it commences in the larynx or trachea, with the croupy cough & voice.

This membrane penetrates the mucous coat, in diphtheria; while in croup it lies on the surface. Albuminuria is not present in croup.

The Prognosis is more unfavorable when occurring as an epidemic. Intense pharyngitis, an extensive pseudo-membrane, and great external swelling, indicate a grave form of the disease. When a croupy cough, voice, and respiration, are observed, a fatal result may be predicted. Treatment—

This being an asthenic disease all depressing measures must be carefully avoided, and a sustaining treatment adopted from the first. The local treatment is all important,

to prevent, so far as possible, the deposit in the throat, and effusion into the larynx, or other parts.

The following, as recommended by Professor Howard, I think highly valuable. Monsel's solution ℥ss.

Glycerine ℥iij.

Carbolic acid gr. x.

This should be applied by camel's-hair brush, to the parts, several times a day. Gargles of chlorate - splash with tinct of iron or carbolic acid. would perhaps act well in some cases. Great gentleness, in making the applications to the throat, is insisted upon in all cases. Hence the same caustic applications, as employed by some practitioners, causing great

pain and restlessness. Should be avoided. If the fever is high, quinia in sedative doses, acts very beneficially in reducing the temperature; and then continued afterwards in tonic doses, combined with the muriatic tincture of iron, and chlorate potash. To a child three years old, they may be given in the following proportion. quinia gri. tinctura iron gtt iij - v. chlorate potash gr iij - v. every three hours. According to J. Lewis Smith the elixir of calisaya bark, the fluid ext. cinchona, or columbo. may be beneficially used instead of the iron, in patients of a full habit and florid complexion. I think the employment of the tincture of iron,

highly valuable in the treatment of diphtheria; perhaps more so than any agent at our command; which should be given freely from the first. The permanganate of potassium, the bisulphite and sulphite sodium are recommended and used by some. Nutritious food, in a concentrated form, should be given often, throughout the attack; as annual broths, milk &c. If the patient is unable to swallow, nutriment may be given by a tube into the stomache, or even by enema; as one or two ounces of cream with a little quinia or iron. Pepsine may be used very beneficially, as a tonic and is thought to have a solvent effect on false-membrane.

Local applications by means of spray, is lauded by some;- Among which I think carbolic acid and lime-water are the best.- ℞ = Lime water ℥j

Carbolic acid gr. v-x.

Applied with spray to the parts. The lime having a tendency to dissolve false-membrane, and the carbolic acid removing pain, and having a tendency to destroy vegetable growths. Inhalation of the steam of lime-water is worthy of trial, especially in the croupous variety. Effusion of the inflamation into the nares, indicates a grave form of the disease, from the absorption of the putrid matter. Taking place with such alarming rapidity.

Local applications to the parts are all important; as injections of carbolic acid and lime-water. When the croupy cough is heard it is advisable, in a robust patient, to administer an emetic which causes the least possible prostration. The yellow sulphate of mercury, sulphate of copper, or alum, are about the best of these. As in the treatment of croup, moisture in the apartment is very important. Tracheotomy should be used only for obstruction in the throat, so as to produce suffocation. If life is threatened by the poison, the operation will be useless.

Examination of Urine.

Wm H Arthur

Baltimore, Feb. 1877.

Examination of Urine.

So much has been written, of late years, on the subject of examination of the urine, such ingenious formulae have been devised, and such simple and effective tests discovered for the analysis, quantitative and qualitative, of this excretion; that there is no good reason why physicians in active practice should neglect this means of diagnosis, which, as now developed, is second to none in importance. There are, indeed, few steps in modern medicine commensurate with those which have been made in this direction; few, if any, more certain means of arriving at the true causes of many diseases

which were, heretofore, very obscure.

Careful attention to this subject not only aids the practitioner of medicine in diagnosis, but gives him, in many cases, immediate indications for treatment; and examination of this fluid is useful not only in diseases connected with the organs immediately concerned in its excretion and expulsion from the body, but in all, or nearly all, systemic diseases of any considerable duration or severity, the urine is affected in one way or another. For it is now well settled that the urine is an excretion pur et simple; that the kidneys manufacture nothing and excrete nothing.

but simply separates from the blood substances which preëxisted in it in their own form, and which, if allowed to accumulate would lead to disastrous or even fatal consequences. These substances are the direct result of the oxydations of the tissues, and it is easy to understand how they may be increased or diminished in amount, in direct ratio with the rapidity or slowness, with which retrograde changes go on; or how they may be altered in character by interferences with nutrition and molecular decomposition.

The urine may be examined in three

ways: physically, chemically and microscopically, all of which, in themselves imperfect, combine to form a most satisfactory and conclusive means of investigation - Examination by chemical means may be subdivided into, qualitative and quantitative; the former of which has for its object the detection of substances which should not exist at all in healthy urine; the latter is used to discover an abnormal increase or diminution of its normal constituents.

With respect to the physical examination of the urine, though it may at first appear simple and unimportant

its importance must not be underestimated; for experience has shown that it is of great value when combined with the other methods of examination, and serves to direct and corroborate our views by other means. The points to be considered in this connection are the physical appearance of the urine, its color, whether turbid or limpid, acid or alkaline reaction; its odor; temperature when passed; the amount voided; and its specific gravity. These are all especially important and interesting, as being generally the first peculiarities in the urine which attract our attention, and as directing our analytical examination in the right direction.

For example: if a large amount of limpid watery urine of high specific gravity were voided, we should suspect diabetes mellitus and tests for sugar would be instituted. Or, if we found the urine of a dark wine color, the presence of bile would be suspected; if the odor were fetid, an abnormal quantity of the phosphates might be present.

The changes in specific gravity are the most important alterations in the urine, to be detected by physical means, and, whatever the test we are pursuing, this property should never be neglected.

The only strictly accurate means for determining the specific gravity of a specimen of urine, is by weighing a given quantity and comparing it with the weight of an equal volume of distilled water, both fluids being at the same temperature. But this is a delicate and difficult process, necessitating much skill, and varied and cumbrous apparatus. For ordinary clinical purposes Bamné's urinometer is amply accurate, if the urine is carefully reduced to the temperature of 60° F., for which temperature that instrument is intended.

In testing the specific gravity of urine, the wide variations of the fluid in

that respect, within the limits of health must be always borne in mind; and only when combined with other suspicious signs and when persistent and not to be explained on simple physiological grounds, must we consider any variation in its density as indicating morbid changes.

The specific gravity of normal urine varies from 1010 to 1030, but if persistent at either of these extremes, serious morbid conditions are to be suspected

The principal and most serious variations of the urine in specific gravity are in diabetes whether mellitus or insipidus, and in albuminuria

when dependent on chronic congestive nephritis or Bright's disease.

In diabetes mellitus, and in continued fevers, pneumonia, pleurisy, extensive inflammations &c. the specific gravity frequently runs as high as 1035, and is persistent at that height while the disease lasts. On the other hand, in chronic wasting and degenerative diseases, it is very low, often reaching 1005 or even lower. This is the case in diabetes insipidus, chronic Bright's disease &c.

After determining the specific gravity of a specimen of urine, and having observed the various physical properties

its appearance and odor; we next proceed to corroborate the suspicions we have been caused to entertain, by chemical means.

The principal substances, the simple detection of which is of importance, and which do not exist at all in typical healthy urine, are, albumen and sugar. Though these generally require simply qualitative tests, still it is important to have some means of determining not only their presence, but also in what proportion they exist, in order to form an idea of the progress any case is making towards recovery or death. Many simple and ingenious tests have

been devised for discovering the amount
for fluid ounces of these substances,
especially in the case of sugar, for which
there are eight or ten quantitative
tests in use.

For the simple detection of the presence
of albumen the most efficient test is
that depending on the known fact that
albumen coagulates under the action of
heat and nitric acid. The test con-
sists in simply boiling the specimen, and
adding the nitric acid, either before or
afterwards. But some precautions are
necessary even here to prevent the possi-
bility of error. In the first place, if
the urine be alkaline, boiling will

cause the deposit ... is earthy phos-
phates which are insoluble in hot
water, and which might be mis-
taken for albumen. This error is a-
voided by being careful always to a-
cidulate the urine (if not already
acid) before the application of heat. In
the next place it sometimes occurs that
if a quantity of nitric acid be added
to the urine, and the mixture boiled,
the albumen, though present in consid-
erable quantity, will not coagulate. This
action of nitric acid is not exactly
understood, but is supposed to depend
on the decomposition of the phos-
phates, which by forming new
compounds, in

some way interferes with the coagulation of the albumen. This error may be avoided by adding the nitric acid after boiling. To determine the amount of albumen in the urine, no effective test has yet been discovered, and the various processes yet known is tedious and difficult. A fixed quantity of the albuminous urine is taken, a small quantity of acetic acid added, and the mixture brought to 212° F. The precipitate is then carefully collected and weighed. A rough estimate of the quantity of albumen present may be formed from the appearance of the precipitate, which may vary

from a faint delicate cloud to a thick dense white precipitate, and this means will generally suffice for simple clinical purposes

The detection of sugar in the urine is by no means so simple and effective; as might be supposed à priori from the number of tests which have been devised for its discovery The oldest and simplest test is Trommer's, but this is simply qualitative and not very reliable, as many circumstances interfere with it. Fehling's and the fermentation tests are much more reliable, less easily interfered with, and furnish a sufficiently accurate quantitative test.

~~accurate quantitative tests~~.

Trommer's test is performed as follows: add copper sulphate in solution to the specimen till the mixture has a bright blue color; next make the mixture strongly alkaline with caustic potash or soda and boil; if sugar be present the insoluble suboxide of copper will be thrown down as a heavy dirty yellowish red precipitate.

Fehling's test is much more delicate, and requires carefully graduated solutions, though it depends on the same chemical reactions as Trommer's. The following solutions are necessary:

(1). Solution of Copper sulphate 90.5 grs to ℥j.

(2) Neutral tartrate of potash 31.4 grs. to ℥j.

(3) Solution of caustic soda of the specific gravity of 1120. Of these solutions thirty minims of the first and second and two fluid-drams of the third are mixed together in a test-tube. The mixture is then boiled and the suspected urine added drop by drop. Two hundred grs. of the test liquid will correspond to one grain of sugar. If sugar be present there will be thrown down a bright yellowish red precipitate on the addition of the first few drops of urine. If the urine is added till it has reached the volume of the test liquid and the whole is boiled again with no result,

we may be sure that no sugar at all is present.

The best and simplest test for sugar, however, is the fermentation or yeast test, which depends on the diminution of specific gravity during the evolution of alcohol and carbonic dioxide in the process of alcoholic fermentation. The urine to be examined is divided into two parts, and the specific gravity accurately determined. Into one portion a small fragment of German yeast is put, and the other is corked up and allowed to stand. At the end of twenty-four hours, if the fermentation is complete their specific gravity is again

determined, and the difference in density of the two specimens will represent the amount of sugar per fluid ounce present. The specimen in which fermentation has been going on will, of course, lose in density, and every degree of density lost, as measured by Bamie's brinometer will represent one grain of sugar per fluid ounce

It is sometimes necessary to test the urine for the presence of bile. Gmelin's test is very simple and generally sufficient for all clinical purposes. It consists in spreading a layer of the suspected urine on a porcelain surface, and dropping on it a drop

or two of nitroso-nitric acid, when if bile be present a beautiful play of colors will take place on the surface.

These are the principal abnormal substances found in the urine by chemical means. A few others require attention, however, Pus, though commonly found by the aid of the microscope, may be readily detected by the addition of caustic potass, which causes a saponification of the fat of the pus cells, and renders the fluid thick, ropy and tenacious. Blood may be detected by the microscope simply, or by a combination of microscopical ~~investi~~

and chemical reagents. The latter combination is effected as follows: a drop of the suspected fluid is placed on a glass slide and in it is dissolved a fragment of sodium chloride crystals; a glass cover is then placed on the slide and a drop of glacial acetic acid is placed at the edge of the cover, and allowed to run into it. If blood be present, hæmin crystals will form, and these are easily recognized under the microscope, by their peculiar characteristics. The test is an exceedingly delicate one, and is employed in medical jurisprudence to

detect the presence of blood in dried stains on linen &c.

There are many varieties of calculi and gravel, which form in the urine, and it may be necessary to determine their composition, in order to tell, whether it will be necessary to operate, or whether solution of the calculus be possible. The only varieties that occur with sufficient frequency to demand any considerable attention are; the urea and uric acid calculi, the phosphatic and the oxalate of lime. All of these varieties present striking differences to the eye when large, but, generally, only small fragments

can be obtained, and it is necessary to determine the composition of these fragments by chemical means. In the urea & uric acid calculi, the murexid test, as it is called, is always sufficient. A small fragment of the concretion is placed on a glass slide, and covered by a drop of strong nitric acid. It is then gently warmed, when it dissolves with effervescence, and, as the water of the acid evaporates, leaves a dry residue. A drop of ammonia is placed on this, when it assumes a bright violet color. This is the commonest form of urinary concretion, and this test will determine the [illegible]

layers of uric acid in calculi of other varieties.

Oxalate of lime or mulberry calculus is recognized as follows: the fragment is gently heated, and breaks down into a dry white powder of caustic lime. This, placed on moist red litmus paper makes a bright blue spot and this behaviour is characteristic of oxalate of lime.

Calculi of the triple phosphates are recognized by their solubility in acids, their total insolubility in alkalis, by the brilliant crystals of the ammonio-magnesian phosphate on their surface, and by their fusing into a hard enamel when heated.

There are certain classes of substances which can most readily and most certainly be detected in the urine by means of the microscope.

These are:

1. Certain minute crystals.

2. Different varieties of casts of the urinary passages.

3. Blood, pus, mucus, spermatozoa etc.

4. Low forms of vegetable life.

Normal urine contains no sediment. If any precipitate appears within twenty four hours after the urine has been voided, some abnormal condition may be assumed to exist. And we must look to this sediment to determine what particular changes are

going on in the organism. The crystals most commonly found in these precipitates are: uric acid and urates of soda and ammonia, oxalate of lime and the ammonia-magnesian phosphates.

Uric acid occurs under several allotropic forms. Sometimes as lozenge-shaped ~~crystals~~, sometimes as flat-stellated crystals - formed by the amalgamation of several rhomboidal crystals. Their color varies from very faint yellow to a decided brownish red. If any doubt exist in the mind of the observer, a drop of caustic potassa may be added, and, after they have been dissolved the mixture may

be neutralized by hydro-chloric acid, when they will re-crystallize in simpler and more characteristic forms. The urates present three forms under the microscope, viz., urate of soda, urate of ammonia and an amorphous granular substance consisting of a mixture of the two and known as the "amorphous urates".

The urate of ammonia occurs in the form of small spherical bodies, with or without projecting spicules, presenting much the appearance of a bulbous root with projecting radicles on all sides, or of the head of an ancient mace. It is distinguished from other urates crystalized by the great

solubility

The crystals of lime sulphate occur as transparent regular octahedra, and, being the most insoluble of all the varieties of crystals found in the urine, require a high power for their detection

The crystals of the triple phosphate occur in, at least, two forms. When crystallized rapidly, they occur as beautiful stellate dendritic crystals, which are quite characteristic. When slowly formed, they exist in shape of well defined rhomboidal crystals

Other forms of crystals are found in the urine, but their presence is so

rare and the causes of their production so obscure, that their study is almost valueless to the clinician. They are known as xanthine, hypoxanthine, creatin and creatinine, guanine and cystine. The last, cystin, is of some interest, as the existence seems to depend on a peculiar diathesis, and it has been known to form a nucleus for stone.

The next class of substances discoverable in the urine in disease, by the use of the microscope, embraces all the varieties of casts of the uniferous tubules. These are minute cylindrical bodies of coagulated or compound matter, formed in the uniferous tu-

bules, and washed away by the urine. They vary greatly in size and structure, and are divided into the fatty, fibrinous, desquamative or epithelial granular and hyaline forms. The fibrinous or exudative casts are most commonly met with in the first stages of acute congestive nephritis. They consist of roughly cylindrical masses of coagulated lymph, opaque, white and covered more or less completely with adhering epithelial cells from the uriniferous tubules.

Desquamative or epithelial casts consist of the lining mucous membrane of the uriniferous tubules which has sloughed away in the course of acute

Bright's disease. They present the appearance of irregular cylindrical masses of epithelial cells in a state of fatty degeneration - and are often studded with minute globules of oil. When the tube casts present this appearance of fatty granules, we have what is known as the fatty casts. and if the granular appearance is very marked we have the granular variety.

Hyaline in many cases differ from the other varieties in being transparent. They appear in the advanced stage of chronic Bright's disease -

The reactions of urea and blood have already been discussed: of Spermatozoa nothing can be said, except that

Their appearance is too familiar and characteristic to require description. Lastly we come to low forms of vegetable life. The most common confervoid growths found in urine are the penicillium glaucum, the torula cerevisiae, and sarcinae.

The penicillium glaucum is found in acid albuminous urine.

The torula cerevisiae is found in some specimens of diabetic urine and in nearly all fermenting liquids.

Sarcinae are found, but so rarely and so irregularly that no cause can be assigned for their appearance

1877

A

Thesis

on Acute Bronchitis

respectfully submitted

for Examination

To the Provost Regents and

Faculty of Physic

University of Maryland

School of Medicine

for the Degree of

Doctor of Medicine

By

John Barron

of Maryland

Feburary —— 1877

Acute Bronchitis

Definition — Inflammation of the Mucous Membrane of the Bronchial Tubes. Inflammation in this situation constitutes Bronchitis. This, in its ordinary form, is the most frequent of the Pulmonary Inflammations. it is a very common Affection in all parts of the Known World. Bronchitis may be acute, Subacute, or Chronic, a highly important Variety of the Disease is based upon the Section of the Bronchial tree effected, The Mucous Membrane Differs from Serous Membranes. and the lining Membrane of the air cells. in being thicker, softer,

much more Vascular, and containing follicles. which secrete Mucus. owing to these points of difference, the anatomical character of Inflammation differ from those which belong to other forms of Inflammatory Disease. Inflammation below the Fauchae Seldom leads to Ulceration. acute Bronchites is generaly preceded by Inflamination of the Mucus Membrane of the Nasal passages. or Coryza. the Inflamination Commences. in the Nostrils and travels downward, either affecting or passing by the Pharynx and Larynx in its passage to the Bronchial Tubes.

The period occupied in its passage Varies from a few hours to One, Two, or three days. in some cases however, the Bronchial Tubes are Affected at once without any affection of the air passages above.

Symptoms

The Symptoms of acute Bronchitis are very different from that of Pleurites are Pneumonia; pain is not a prominent Symptom, but the patient complains of a sense of Tightness, with a feeling of Dryness or rawness as they usualy express it. these painful sensations usualy accompany acts of Coughing, the pain is of an obtuse or Contusive character

and is situated beneath the Sternum.
The attack is not often accompanied
by a distinct chill but chilly
sensations followed by flashes
of heat are felt during the Disease.
the appetite may be more or less
impaired, but is not usualy lost.
the fever is generaly slight, the pulse
has not the frequency and force which
it has in pleurisis and Pneumonia.
the heat of the surface of the body is
but slightly raised above the normal
standard. the cough is at first painful,
but not enough to call for suppressing
remedies, it is at first dry the
secretion of Mucus being for a
time scanty. deep inspirations,

Breathing cold air or the free exercise of the Voice excite acts of Coughing, which occur in paroxysms and consist of a deep inspiration followed by a series of expiratory efforts. if the paroxysms of Coughing be frequent and severe, the traction of the Diaphram causes the pain and soreness referred to the false ribs and the ensiform Cartilage. The patient feels as if relief would be afforded by more abundant expectoration, and desires to have the Cough loosened. the Expectoration is at first small, glairy, frothy, and Viscid, and occassionaly streaked with Blood.

in a few days the expectoration becomes more abundant and consists of thick yellow, or greenish sputa. the Cough is then said to be loose the acts of expectoration being easier and attended with but little pain and followed by a sense of comfort, the mucus secretion is seldom sufficient to accumulate in the tubes and occassion embarassment of respiration. this may happen in the aged and feeble or in young children. the increased amount of Mucus secretion and the change in character, denote diminution or resolution of the Inflammation respiration is not

Sensibly effected. no portion of the lung is withdrawn from the exercise of its function as in pleurites and Pneumonia. Bronchitis is not usualy accompanied by much debility. the average duration of acute Bronchitis is about ten or twelve days after four or five days the patient is generaly able to walk about. acute ordinary Bronchitis is an Inflammation effecting a Mucous structure, leading to a Secretion of Mucus and the production of Muco-pus in greater or less abundance. resolution takes place in this situation without the occurrence of Ulceration.

Bronchitis is very frequently, if not generally, by Cold, exposure to Cold is supposed to produce this disease by interrupting the eliminative functions of the Skin, whereby an increased duty is thrown upon the pulmonary Mucous Membrane, and by inducing internal Congestion. Bronchitis occurs secondarily to, and forms an element of, other Diseases it belongs to the clinical history of Rubeola and in this connection it is frequently acute. it belongs to Typhoid fever, but is rarely acute in connection with this Disease. developed in connection with disease situated elsewhere than in the pulmonary

organs, it is Symmetrical as when it occurs primarily; but developed as a Complication of Pneumonia and Tuberculosis, it may be limited to one side, that is unilateral and is not confined within a Circumscribed Space; it may be produced traumatically by the action of irritating gases. received with the inspired breath, in some people owing to a peculiar Susceptibility of this Membrane acute Bronchitis may be produced by a Variety of Causes.

Diagnosis

acute Bronchitis is to be discriminated from other acute Diseases of the respiratory Organs, it is to be

discriminated from Pleurisies and Pneumonia especially the latter. the absence of lancinating pain, and the pain which is felt being Substernal; the presence of more or less. expectoration which is not rusty; which is either Streaked with Blood or devoid of it altogether absence of accelerated Breathing and Dyspnae; absence of the Circumscribed flush of the Cheeks, the pulmonary Symptoms being preceded by Coryza, with perhaps Soreness of throat and Sub acute Laryngitis. these points are chiefly negative and the are not Sufficient for a positive Diagnosis in all cases. because the

Symptoms belonging to Pleurisy and Pneumonia are wanting in Bronchitis, are not allways present in the former diseases. the Physical Diagnosis is based chiefly on Negative points percussion elicits the resonance of health. the respiratory murmer may be weakened, but is not otherwise altered. Suppression of the Murmer over a portion of the chest may occur temporarily from obstruction of a Bronchial Tube by an accumulation of Mucus. these points warrant the exclusion of Pleurisy and Pneumonia. the dry or moist rales may, or may not be present

at the time when examination is made. their presence and diffusion more or less, over both sides, are indicative of the existence of the Disease. but the absence of Bronchitis is not to be inferred because these signs are wanting when the Chest is examined.

Prognosis

acute ordinary Bronchitis not associated with other affections, is not dangerous excepting when it occurs in young children, or very old and feeble people. the danger in these classes of patients, arises from an accumulation of the products of inflammation

within the Bronchial tubes, and
from a tendency to collapse
of Pulmonary lobules, the danger
then relates to apnae. the Disease
does not lead to great prostration
and danger from asthenia. exclusive
of the class of patients just
named, the great majority of
cases of this Disease passes
through its course to complete
recovery, but it may eventuate
in Chronic Bronchitis.
Bronchitis associated with other
affections for example, pulmonary
Emphysema, it may give rise to
much suffering and danger.
as a rule the disease has no

tendency to induce either pleuritis or Pneumonia and according to authorities it very rarely precedes the development of Pulmonary Tuberculosis. acute or simary Bronchitis, or Bronchitis is probably in its various forms, the most frequent Disease of early, and middle, life. there is no disease which the practitioner of Medicine, so often encounters or in which his Skill is so often Needed; simply, because the disease, may be brought on by the slightest exposure, and it is recognized in every portion of the Civilized World.

Treatment

acute Bronchitis may be cut short if not aborted if treated properly in the Beginning That is within Twenty four Hours from the Commencement of the attack by taking at bed time a Hot Mustard foot Bath, and an Opiate, say Ten Grains of Dovers powder if it does not cut short the attack, it may greatly mitigate the Severity of the Disease. if the Disease become established, it does not claim active treatment. in view of the almost uniform tendency to recovery with mere

attention to the laws of nature.
Blood letting is not usually
called for except in some rare
cases. in which the patient
is plethoric, and the symptomic
febrile movement is very severe.
a saline purge given early in the
disease will prove serviceable
if the attack be very severe
it will be good practice to
confine the patient to bed for a few
days. to secure a uniform warmth
and Moisture of the surface of the
body. Diaphoresis relieves the
inflamed membrane, and
renders the patient more comfortable.
if there be much pain and soreness.

of the Chest Linaipisms or Stim-
ulating Liniments are useful
and may be employed with
advantage. Stimulating expectorants
are not indicated in the first
stage of the Disease, in so far as
the have a faculty of exciting
the Bronchial Mucus Membrane,
and therefore may tend to increase
Inflammation, opium is said by
some to be Contraindicated in
the first-stage, But I think
it is as much admissable in
this as in other forms of Pulmonary
Disease and instead of delaying
may hasten the Second Stage. it
is allways admissable when pain

is an element of the Disease.
in the second Stage of the disease
expectorants are useful such
agents being selected as the
particular case may require.
Should the affection linger and
threaten to become chronic,
a Nutritious diet Sulphate of
Quinine and other Tonics will
be indicated. The following
Remedies all prove useful as
Conditions, require their use.
Senega, Scilla, Muriate of ammonia
Glycyrhiza pruni Virginiana.
and Nitrous powder in the febrile
Stage is very useful. Some practioners
of Medicine.

highly extols the Therapeutical Virtues of Chlorate of Potassii they claim it to be a very valuable agent in both the acute, and Chronic form of the Disease.

1877

Solanaceous Plants.

Solanaceous Plants.

A Thesis.

Respectfully submitted to
the Regents and Faculty
of the Maryland University.
School of Medicine.

B. Frank Grove Jr

Baltimore. Md.
Feb 19 1877.

Dr Lindley, stating the advantages derivable from the study of Botanical science, says; "The quality of an imperfectly known plant may be judged of by that of another which is well known." Within certain very narrow limits; yes: with the Nightshade Lowness, the rule by no means applies; for, there are few plants indeed, of the order which agree in even a few particulars; and, even among these, differences are found, slight in some cases it is true, but most frequently sharply defined. He divides the family into four medicinal classes; narcotic, diuretic, tonic & purgent, bland or inert. How are we to ar-

we at a conclusion, that a certain herb will have diuretic properties, by comparing it with a known narcotic botanically allied to it; is a point which he does not explain. The author of the "Vegetable Kingdom" claimed more for the science than is at due: botanical affinities may be criteria, but they cannot be the criteria for determining effects, any more than can sensible properties, or mere chymical analogies. The truth of the preceding is manifestly exemplified by the order under discussion. It is proposed, here to speak of a few of the members of it, which bear to each other a more or less close

resemblances, more especially of those known as midriales. It is necessary however to be very brief, since a full consideration of so important a subject would require more time and space than would be compatible with a thesis.

The Solanaceae are closely related to the Figworts; indeed, the Nightshade of Linnaeus included plants since recognized and classed as Figworts. Much discussion has been going on among botanists as to the true position of the family and is still by no means settled. Dr Lindley, who has made as many innovations, almost, as De Candolle, divided

it, on account of minor differences of isomerity and aestivation, into two; Solanaceae, and Atropaceae; this, it seems upon the authority of Miers, and Bentham, though both the new orders agree in the general characters of Nightshades. The differences mentioned are quite sufficient to distinguish tribes etc., but are certainly are not sufficient to separate a natural order. De Candolle, in his "Prodromus," seems to take a more correct view of the case; and, following in the main the first diagnostic characters of Lindly for the Solanaceae, divides the order into two <u>sub</u>orders; Nolaneae —

which is of no importance; and Solanaceae, — and the characters, upon which the author of the "Natural System", would found orders, are taken, and, with propriety, to constitute the genera and tribes under this sub-order; which includes the great majority of plants of the order, valuable to man either as medicine or food. Some of the minor divisions of De Candolle however would seem to owe their existence to sheer vanity, rather than to any peculiarity artificial or otherwise. Criticism is elegantly avoided, it would appear, by dedicating many of them to prominent scientists

Nightshades found habitats in all quarters of the globe. A most natural family; numbering many ornamental plants; as, Petunia, Atropa, Species of Datura; Lycium; the genetic number however being uninviting, rank plants, exhaling a narcotic, and often nauseating odor. Springing up everywhere, preferably in rank soil, among rubbish, many of them are exceedingly troublesome weeds; with their congeners ambrosia, Lappa, Echium, Polygonum anthemis cotula, they form in our neighborhood the pests of the soil. The fruits, as a general thing are more or less poisonous; those of S. Lycopersicum and melongena are only

apparent, not real exception to this;
as those of the former loose their
poisonous properties in ripening; and
those of the latter in the process
of preparation for cooking: the potato,
S. tuberosum, not being a fruit,
but a hypogaeous abortive branch,
tuber, does not come under the
rule. The roots leaves and seeds are
the most active portions of the
plants; they owe their power to nu-
merous alkaloids, which are found to
possess various properties; emetic,
tonic, hypnotic etc. The alkaloid,
solania, has been found in the
water in which potatoes have been
boiled; it is feebly narcotic, and

is probably more widely distributed than any of the others. More will be said of these principles below

Few of the family are free from the ravages of insects, many being attacked as soon as they appear above ground; even the repulsive S. carolinense is unable to resist them. Many of the parasites have attracted the attention of naturalists; one among them, the Sphinx atropos, a lepidopteron, on account of a peculiar noise which it makes, either by expelling air from cavities in the abdomen, or, by friction of the palpi; another, the Dorycthora decemlineata, a cole-

optera, originally feeding upon the S. rostratum of Colorado, but more recently, the cultivated tuber, on account of its rapid and apparently irresisible spreading. The tobacco worm is well known by its ravages. Fungi attack these as they do other plants: Botrytis of the potato was once an almost endless cause and subject of discussion, Species of Sphaeria are found upon A. belladonna. In this connexion, it seems probable, notwithstanding the minuteness of these epiphytes; that to them is owing alteration of strength of herbs, as much as to other causes. The Acinula clavus

of cereals furnishes a remarkable instance; and this, being attached in its turn by a similar growth, deteriorates much in medical virtue. The necessity for the greatest care in the selection and preservation of medicinal herbs, and especially of the more talent-, should thus commend itself to collectors.

The wide range of properties of the order renders the uses to which its members have been put at once various and numerous; and to an extent which would not a priori be supposed to be possible or probable.

S. dulcamara, which has been in use since the times of Theophrastus, — 350 B.C., — who called it Vitis Sylvestris, has been and is considered invaluable as an application to bruises and similar injuries; Puneeria coagulans takes the place of rennet in India; an inebriating narcotic drink, bonga, is made on the Isthmus of Panama from the fruit of the arborescent Datura sanguinea (De Candolle); the Leuconchera venenata, a large shrub with fragrant flowers, furnishes a juice, with which the Hottentots render their missiles deadly, and wounds from them inevitably fatal;

an oil of tobacco furnishes the same tribe with a ready means to kill reptiles; S. saponaceum affords the Peruvians a substitute for soap; S. pseudoquina, Brazilian quina, a name, is still believed by some to produce the genuine Jesuits' Bark; from the S. vesperilio is obtained a pigment, with which the women of the Canaries paint their cheeks; the women of Italy, since about the 15th. century, have been using a water prepared from Belladonna, for the purpose beautifying the complexion, by clearing the skin and removing spots from it. A. mandragora

was thought, in former times, to
possess the remarkable and valu-
able property of doubling an amount
of money placed with it; it
now occupies a less exalted
position, and is applied to
the relief of pains and aches;
more commonly among the Siberians.
Physalis somnifera is used in India
as an application to inflammatory
humors; also as a hypnotic, though
insane sometimes results; the
berries of some species of this genus
furnish a not unpleasant article
of food. From Datura tatula,
erroneously? considered a variety
of D. stramonium, in some, there

is obtained a substitute for opium;
it is said to have been used
by the priests of the Delphic
Temple, and also by those of the
Temple of the Sun at Sagamozo;
it is used in Peru to make an
exhilarating drink. D. stramonium
is applied to bruises and injuries
of various kinds; among people beyond
the reach of physicians, there is no plant
in more constant use; their faith in it
as a cure for asthma is proverbial. One
Acosta, a Portugese physician says it was
in use in India for nefarious purposes
when he visited the country — a couple of
hundred years ago, — indeed, it got one
of its many names, l'Herbe du diable,

about the same time, from the fact of its being used by robbers and sorcerers in France. Capsicum frutescens, baccatum, would be invaluable in relation to its use in Scarlatina alone, did it not also perform duty as a tonic, stimulant, and agreeable condiment; as the last it is considered superior to the common black-pepper: C. toxicarum is the sole species which is at all poisonous. Quito oranges, strongly resembling the fruit of the C. aurantium, are the product of the Solanum quitoense. Potatoes are produced by various S. American species; introduced into England from Peru by Sir Walter Raleigh, they have almost superseded the Sweet-Batatas edulis, which is the potato of

of Shakespeare; and botanists previous to 1886. As an article of food it is second in importance only to the cereals, which derive their value from having the nutritious elements present in the conditions & forms most acceptable to man and beast: cereals, besides, furnish directly and indirectly most if not all the food of the latter. The tomato, little known as an article of food in the old world, has been, within the last few years duly appreciated in this. A recent writer says, "As an article of food it is one of the most healthy, it is as efficacious as calomel in certain conditions, and combines tonic and aperient properties,

melongena is by no means so whole-
some, I have known it to produce
unpleasant effects, in consequence of
the poisonous juice, which it contains
in abundance, not having been pro-
perly expressed. The tobaccos furnish
the most remarkable history of known
plants. Sir Walter Raleigh introduced
the use of the weed into England
along with that of the potato; this is
commemorated by the representation
of a tobacco plant, on his shield,
in his house at Islington. Chardin
1660, says, it grew and was used
in Persia 40 years before he visited
that country; another traveller says,
the Chinese have been smoking of

the weed (?) for ages. A pope, Urban VIII, 1630, and King James proscribed it; but all to no purpose; for it has become an absolute necessity to the vast majority of civilized humanity. James I, the "Literary Monarch", compared the "black stinking fumes thereof," to the "horrible stygian smoke of the pit which is bottomless." The rapidity with which tolerance of this weed, so extremely nauseating and depressing, is acquired, and, the persistence, after having been so acquired, are not equalled by the opium-habit itself: in addition to being smoked, snuffed, chewed, it is actually, at times, eaten, with apparently no ill effects.

S. nigrum furnishes another substitute for opium; it is availed of at times as refrigerant diuretic; the leaves are used by some as food, though the whole plant is considered more or less poisonous. The berries of the ornamental Lycium are said to have been used as cathartics by the Hebrews; London Pharm. they were probably confounded with those of some species of Rhamnus, which are known to be cathartic.

Before concluding the general reference to the peculiarities and uses of the order, it will not probably be out of place to mention;

that the common potato, if allowed to grow above ground, in the sunlight becomes considerably changed in properties, in fact it becomes totally unfit for food, and poisonous. The tuber has been observed in decaying to give off a more or less decided phosphorescent light.

And thus the list might be stretched out almost ad infinitum, for botanists have collected an almost endless array of facts in regard to this interesting family. The foregoing are scarcely adequate to give one an idea of the many curious, and often important me-

which its members have been found.

Little is known of the early history of the use of these plants in the medical profession; This is one of the losses, no doubt, which the world of science suffered in the destructions of the great libraries of Alexandria and Andalusia, losses, which though centuries have elapsed are still as keenly felt as if they had occurred yesterday; losses, the extent of which few minds can appreciate. The Congregation of the "Index Expurgatorius," and the Inquisitions of the middle ages, also did good work towards keeping us in the dark. The "Father of Medicine" and his successors do

the times of Celsus and Galen leave us some traces; but, from these latter to the 18th century, there is almost a total blank. Indeed, after the accession of Constantine the Great, the closure of the asclepiads, the introduction of the theological theory of disease and the theological, — shrine and miracle, cure of the same; there was little need of, in fact there was little quarter given to, either physic or physician. The fragments of Hippocrates and his followers which remain to us should excite our highest admiration; showing, as they do, a cultivation and learning with which the bigotry of theirs, and

many subsequent centuries but ill contrasts. Comparing our so called advancement, our improved methods of observation with theirs, we certainly cannot boast of anything like a proportionate amount of progress.

Mandrake is one of the many of this family which was in use. It is mentioned by Hippocrates, Dioscorides Galen Celsus, Serapion the Arabian, and others. One of the purposes it subserved was that of producing sleep and insensibility during operations. In fact it was classed as an anodyne. From the resemblance of the root to the human form it was thought to have aphrodisiac properties;

Lines are of the names of Venus;
Mandragoritis. It was used in in-
flammation of the eyes The mandrake
of the Old Testament cannot be Atropa
Mandragora; it is said in Solomon's Song
that, "They give a smell and at our
gates are pleasant fruits." The reverse
would be the case with the medicinal
plant. Dunlop and Scott think
they must have been a kind of
Hannibal, at least his allies, are said
to have made use of it for the purpose
of making some enemies impotent
and thus an easy prey. The Scots
destroyed a Danish army on one
occasion by a similar subterfuge.
The poison - Atropa belladonna. In

given to the latter in some wine; which the former were required, by treaty to furnish. Mandragora was a favorite remedy with the ancients, mainly as an anodyne and hypnotic; Dioscorides recommended it also in struma and tubercle, and for the purpose of evacuating "black bile". It does not appear to have been used to any very great extent by the moderns. The Solanum nigrum, Strychnus hortensis of Dioscorides the S. esculentum of Galen, the common black nightshade of Virginia, was directed as a refrigerant. The former writer recommends it in erysipelas, ulcers and earache locally; Aretaeus directs Physalis Al-

Kekinge in treatment of gonorrhoea.
Various species of the family are directed by these old writers in treatment of dropsies; most of them under the name of σεριχνος, for that is the name, according to Celsus by which these plants were known to the Greeks.
Dulcamara was used by these old practitioners as a diuretic and alterative; it is still considered to have these powers, the former is not thought to be quite as apparent as the latter; however, Störck is said to have used it with success in calming the pains of gout. To Dr Störck is said to be due the honor of having brought Stamonium prominent

ly before the profession. Pareira suggests that this is the στρύχνον μανιακὸν of Dioscorides; his description, a very clear one, of this plant certainly does not answer to that of the Datura. The plant had a very bad reputation at the time the Baron took it up, as might be judged from what has been said about it on a previous page, indeed he says as much himself in the account he gives of it. He says he was led to try it by a query, which suggested itself to his mind, upon observing that it disordered the minds of sane persons; "Might it not bring the insane, and persons bereft of their reason, to

sanity, or Roundness of mind; and,
by a contrary motion, remove convul-
sions in the convulsed?" Notwith-
standing this curious logic, he tried
it: first, in the case of a girl, a
Trifle insane, who apparently re-
covered; next, in the case of an
epileptic, who, though much im-
proved, died. The result of these
and other experiments of this
kind is well known; Stramonium
forms an important item in
the Materia Medica, as a remedy
in the above ills as still in use,
though it seems more efficacious
in asthma and certain inflam-
matory conditions. A species

t this plant is said to have
een known to Serapion the Arabian,
y the name of Nux methel and
mpared by him to Nux vomica (?)
To Baron Störck, who considered
l superior to opium, is also due the
onor of introducing to the notice
f the moderns the use of Hyoscyamus;
or, though well known to the
ncients, it was practically not
n use by the earlier moderns.
Dioscorides, who appears to have
een authority for 1500 years, gives
succinct account of this plant;
escribing three species; niger,
lanus, albus. He preferred the
ast and considered the first

pernicious: "Quodsi hic (albus) defecerit, flavus adhibendus est, reiciendus autem niger ut deterrimus." (Kuhns Transl.) He advises it in inflammations, neuralgias of various kinds, discharges and fluxes, ruptures of blood, swollen breast, etc. etc. Celus also directed it, as did others of his time, more particularly as an anodyne-narcotic. It is interesting to note what the learned and philosophical writer says of this class of remedies; "Ἀνώδυνα vocant, quae somno dolorem levant: quibus uti, nisi nimia necessitas urget, alienum est. Sunt enim ex vehementibus

medicamentis et stomacho alienis."
Whilst that which led Celsus to
the above no longer holds to day,
in consequence among other things,
of a better understanding of the
nature of the remedies and the
more agreeable forms of administration,
still, it is probable that these, the
anodynes are too often used, too often
directed to a symptom, which
will often disappear if the cause,
malarial, rheumatic, syphilitic or
otherwise, is carefully sought
and properly treated. One of the
later Serapions used the seeds
of Henbane in conjunction with
anise and opium in treatment of [illegible]

like Datura this plant had a very bad reputation when Störck took hold of it; the "Dict. raison. des Sciences" published some years before says of it: "En général, la medecine ne perdroit pas beaucoup, quand on banniroit absolument de l'ordre des remedes l'une et l'autre jusquiame" Opinion has long since changed and the drug has become a valuable acquisition to the general store. Mr Robert Lawson, of the West Riding Lunatic Asylum, has recently introduced the use of the alkaloid in the treatment of acute mania. Of it he says; "M

cine capable of producing nar-
cotism operates with so much
certainty, and none has such a
decided capability of leading the
mind from absorption in delusions
and hallucinations, through a milder
physiological form of mania to
a state of complete, and under
favorable conditions, permanent
convalescence. "It is to be hoped
that an unhappily numerous class
may soon find a palliative if
not a cure for their [illegible]
It remains for future experiments
to show whether the enthusiastic
estimate of Mr Lawson has
been misplaced [illegible]

A. Belladonna, the only species of
he genus now used medicinally, and the
fact to which I shall refer, does not
appear to have been known to the
ancients, or indeed to the moderns
until a comparatively recent date.
Jerome Bock is said to give an
account of it, but his works not
finding a place in our libraries can-
not be consulted. Trousseau
says that one Mechior Trick, A. D.
1710, of whom a careful search
among the literature of the day dis-
covers nothing, was the first to
write upon it. In addition to the uses
already mentioned, it seems that
the herb was used about that
time against hidden tumors and a [illegible]

This is the plant constantly referred to in books as the one which caused the death of so many of Antony's army during his war with the Parthians. A reference to the passage in Plutarch; ἤψαντο τινος πόας επὶ θάνατον διὰ μανιὰς ἀγούσης.— τελος δε χολὴν ἀμοῦντες ἔθνησκον, ἐπεὶ καὶ το μόνον ἀντιπαθὲς, οἶνος, ἐξέλιπε, hardly bears out the truth of the hypothesis, for numerous other herbs would have produced about the same symptoms. It is of interest to note, however, that a careful observer, Gaultier de Claubry, very accurately describes the symptoms of a kindred gay and foolish delirium in the case

t an hundred and fifty soldiers
who had eaten of the berries of
ce plant. Ils cherchaient contin=
uellement à saisir quelque chose
ur des habits de leurs camarades
u des assistants. Chez l'un des malades,
e délire eut quelque chose de sing=
lier, ce fut un véritable état de
somnambulisme, pendant vingt =
quatre heures cet homme fut insensible
tous les objets extérieurs, occupé
uniquement à faire tous les gestes
e son état de tailleur, comme
'il eût travaillé réellement ;
'un autre il eut des hallucinations,
arlant comme s'il eût eu une
onversation avec un interlocuteur."

As matters of history, these and the many other instances of poisoning by the Solanaceae, which abound in the literature of the subject are certainly of more than ordinary interest to the student, as, though often disastrous, they frequently gave the first clue to therapeutic application, which is of so great importance that it might well make a Sydenham debate as to which he ought to invoke opium or a "midriatic".

The little that is known of the Belladonna is of so recent a date that it is hardly necessary to go over it here; suffice it to say that to Dr Rimerus of Hamburg seems to be due the honor of having first used it to dilate the pupil.

The three last mentioned, Hyoscyamus, Datura and Atropa, differing from each other rather in degree than in kind, — the first being the weakest, producing no effect upon the sphincters, never causing any confusion, acting "much (?) powerfully" on the iris, and being said to excite little or no ecstacy or mania, (the history of the plant certainly shows the reverse of this last point of difference) differ widely from Opium. According to Drs Mitchell, Keene and others Atropia, which may be taken as a type, is antagonistic to Morphia in its action on the alimentary canal, the brain, the iris, the pulse; and combined with it in proper

dryness of the mouth and dysuria. The conclusion of the above writers that Atropia, hypodermically applied, does not relieve pain is untenable since that is one of its most valuable applications. Dr Harley writes that, the two are "concurrent except when the spinal and sympathetic nerves meet in muscular antagonism," That antagonism is supposed to exist in the pupil or rather in the iritic tissues. A brief digression here will hardly be out of place, since, a proper understanding of the action of the iris will have an important bearing upon a correct appreciation of the physiological action of Atropia

The iris consists mainly of blood-vessels and connective tissue; an opening in the diaphragm is to be contracted and dilated. How? Nothing is simpler; we have but to give it a sphincter for the former, and dilating or radiating muscular fibres for the latter purpose; a beautiful arrangement, most easily understood, but quite Platonic and apparently utopian. The dilating fibres have never been made out; and, it seems unreasonable to suppose, that the thin band which surrounds the pupillary margin is muscular, and controlled by the third nerve, the sympathetic presiding over the radiating fibres. From

writers' own observations he certainly would not be willing to posit that that circular band is muscular, especially if the readiness with which microscopic misinterpretations can be made is taken into account. Nothing more clearly shows this liability to error than the multiplicity of views in regard to the appearances of podura scales alone. The microscope bears about the same relation to the eye that the probe bears to the surgeon's finger; it but extends its scope, and like it is by no manner of means infallible. The experiments of Bernard show two things; that section of the sympathetic is fo

caused by persistent contraction of the pupil, and that section of the oculo-motorius is not followed by the reverse condition. The external influence is that the sympathetic does, and the third nerve does not, extend an influence upon the iris. Returning now to the lens, what does it show? It shows, among other things, that a great number of minute vessels enter into the composition of the iris; that these are arranged in loops, having their apices at the pupillary margin, and their attachments (so to speak) at the periphery of the iris, where the one end of the loop runs [illegible]

leaving out of, and the other end
leaving into, the ciliary body; the
whole is then held together by the
normal connective tissue. What
now will result from hyperaemia
in such a structure? Obviously,
a lessening of the diameter of the
central opening. Alike evident must
it be that diminution of the quantum
of blood will have as a concomitant
dilatation of that opening. What then
becomes of the so-called sphincter?
Nay, is not the simple elastic tissue
maintaining by its resiliency the integ-
rity of the pupil? In fact is not
the iris an erectile body similar
to those found in other parts?

Thus can be explained the pin-hole pupil after section of the sympathetic, which, according to Bernard, being paralyzed is inevitably followed by determined congestion in the parts to which it is distributed. Thus can be explained the pin-hole pupil which is seen in the complete nervous prostration and paresis of opium poisoning. Nor moreover is found the explanation of the total occlusion of the pupil in traumatic cyclitis; a case of which the writer had recently an opportunity of observing.

Turning to this, the sympathetic, or, more properly, the vaso-motor system, the existence of which and its

influence upon the vessels cannot to day be denied, one finds an explanation of the action of Atropia upon the pupil; for it is by stimulating the vaso-motor nerves, that the alkaloid causes contraction of the vessels of the iris, squeezing out the blood, (so to speak,) and, the resultant mydriasis follows as a matter of course. This view seems, I would not presume to say that it is, more tenable than the one which attributes the effect to a sedative influence of Atropia upon the third nerve on the one hand, and a stimulating influence upon the sympathetic on the other. Certain it is that many effects and conditions, both in

health and disease, formerly attributed to other causes, must now, in the opinion of a most eminent lecturer and specialist, be ascribed to vaso motor intervention or non-intervention.

Mydriasis by Atropia is accompanied by some very peculiar conditions. In order to become acquainted with them the latter, the writer applied a few drops of a one per cent solution to the right eye. Dilatation accompanied with almost complete disappearance of the iris followed in half an hour; there was complete loss of accommodation; the near point of vision was removed to a distance of nearly 36 inches (that of the other eye being about 5;) objects looked

at appeared of greatly diminished size,
and light which could not be borne
by the normal eye was altogether im-
operative upon the altered one. There
was moreover such a feeling of dis-
comfort about the organ as to be
at once annoying and almost insup-
portable. Over a week elapsed before
it returned to its natural state.
It is scarcely necessary to add that he
learned a practical lesson as to
the disadvantages of strong solutions,
or even weak solutions applied freely
to the eye, except when absolutely
required. Moreover, a friend, Dr
McD., says he has known it to
bring on, under certain conditions, an

acute attack of glaucoma, and, hence the necessity for still further precautions. The very important uses of Belladonna as a mydriatic are well known and appreciated. Dr Reinhardt, as before remarked, used it thus to get the iris out of the way of the extraction of cataract; but, as this is not found to prevent the consecutive iritis other measures have to be taken with alone or in conjunction with it. As an aid in the diagnosis of many of the obscure diseases of the eye a mydriatic is absolutely indispensable, serving to separate many affections hitherto recognized as one and the same.

In parenthesis, Orfila relates an interesting and practical use made of a mitriatic, Belladonna, by some nearsighted recruits, who temporarily corrected their affection with it, and were thus enabled to pass the physical examination.

Passing over the use of these as anti-spasmodics, hypnotics, one is led to pause a moment and consider their action in inflammation, more especially that which is local and superficial. In this there is one very important effect which they, locally applied, by a peculiar tendency to act upon the peripheral nerves, exert, namely, that of rel-

ing pain; which, whether due to de-
generation of nerves, or increased tension,
seems to be promptly re-
They do more than this however,
for they are compliant to prevent
the full development of inflam-
mation, and, if developed, to check
it. An observing traveler tells me,
that in mines and quarries, where
so many painful bruises and crushings
are met, there is nothing in more
common use, for this very purpose,
than Stramonium; in the form of
extemporaneous, tincture, poultice
or juice of the bruised stems and
leaves; generally the pains are checked
at once, and return to the

condition hastened. The effects of Atropia in iritis are well known. Dr McD says he has observed the application check a threatening specific phlegmon. Many other facts as to a like use of one or the other of the three might be cited but space forbids. The question now arises, how do they produce their happy effects? Certainly it would seem by a controlling influence upon the vaso-motor system; by interfering at that time when the nerves irritated to paresis are about to withdraw their influence from the contracted capillaries, and these are about to dilate;

and be followed by stasis of the blood and the consequent transudation into the tissues. May it not be, by thus maintaining the tone of the vessels, and preventing the last two most important factors in the process, that the inflammation is aborted? It is possible, and seems probable that Bry's, Belladonna's, action in hyper secretion of milk may in like manner be referred to a quieting influence upon the nerves, abnormally affected, and to an improved tone of the vessels also brought about by it, by which the accompanying action of the gland in the latter regard?

A priori from the observed fact

of Belladonna upon the iris and from its influence in inflammation, one would expect it to be efficacious in certain passive hemorrhages. Here is a case in point; a patient in the second stage of pleurisy, complicated by bronchitis, is persistently coughing blood in small quantities. The subject was weak and anaemic. Belladonna was suggested by Drs A— and M°D—, with whom I had the pleasure of seeing the case, with a view of relieving the hemorrhage; supposed to result from collateral congestion and an atonic condition of the vessels. Complete disappearance of the

symptom was observed on the third day; concomitant with it was a moderate dilatation of the pupil. Whilst it would be irrational to base a positive opinion upon a single case, still, the result in the above case corresponding so closely with what had been predicted, one is warranted in believing that the drug does exert some hemostatic power; as an adjuvant to other remedies known to act upon the vaso-motor nerves, ergot, bromide of potassium, it might prove of great service. The question suggests itself, as to the probability that the increased frequency of the pulse, noticed after

administration of the drug, is due in part to increased tension of the vessels; and also, that the cessation of the night sweats of phthisis is due to the same factor.

Given that the mitrates produce their effects in the manner previously stated, they would seem to be indicated in hydrocephalus, acquired or spurious, (Smith,) more especially the latter, especially when they can be traced to nervous prostration, deficient innervation of the vessels of the brain. Choleraic conditions, e.g., cholera infantum, when dependant upon atony of the vaso-motor nerves, and not upon removable improper hygienic conditions,

would seem also to indicate their use.
Good effects, if obtainable by this means,
might be increased by the adjuvant
action of the bromide of potassium,
a mineral mitigative, which is said
to be useful in just such conditions.
As a physiological antidote, the hyper-
aemia of the cord, in poisoning by
Strychnia, (which is said to contract
the pupil,) would suggest Belladonna;
this of course, not precluding the em-
ployment of other remedies directed
to the various urgent symptoms. Cal-
abar Bean, which strongly contracts the
pupil, has been used in these cases
though it would seem to be contrindi-
cated; such is indeed the case, for as against

Strychnine is effects are nil. In Belladonna poisoning it has some influence; mutatis mutandis the common would probably also be the result. Opium poisoning has been variously thought to indicate the use of Belladonna & the reverse. Success has followed the remedy in many cases, though there has more frequently resulted failure. Probably, for the same reason that albumen, or any other antidote is worse than useless, when a patient is in articulo mortis from a dose of corrosive sublimate. Any one, who, in the extremes of poisoning by one or the other of these agents, would administer, in dose sufficient to

connect any obvious symptom, the antagonistic agent would probably be defeated by the very means with which he hoped to obtain success. The fact is, Opium and Belladonna are antagonistic: the former tends to cause coma; the latter, delirium; the one constipates; the other relaxes the bowels; the first contracts the pupil; the second does the reverse: the former is diaphoretic; the latter, just the opposite: this is diuretic; that causes, it is said, dysuria, &c. As a matter of fact there are also many respects in which their effects seem to be more or less the same. On the pulse this is some similarity of action; and, at the same time, wide dissimilarity. Stille

cites authoritatively numerous cases of
poisoning in which they were used
as antidotes to the one to the other.
He considers the condition of the pupil
an "infallible index" for the administra-
tion of the one or the other in these cases
Possibly. He has a saving clause further
on: "The condition of the pupil is not a
sign that the patient is safe but only
that the remedy is active." Woods-B-
while admitting the antagonisms men-
tioned above, thinks, that they do not
extend to those points in which entitle them to rank as cerebral
stimulants. He says, "Both may advant-
ageously be used with reference to
their special influences; and, that"

would be very hazardous to trust
a case of poisoning from one exclusively
to the antidotal powers of the other."
Quinine is the Key to the whole subject,
a Key to a rational practice of medicine.
Strictly speaking there are no specifics;
every drug ought to be administered
with a view to its particular effects,
and for that administration each
case of disease may furnish a
different indication. Quinine cannot be given but hazard, without
due regard to ever varying circumstances,
in every case of malarial fever,
just because it is an antiperiodic.
Syphilis may, indeed often does,
require something more than

mere mercurial treatment, or that of iodide of potassium. Medicines would be of little avail in infantile diarrhoea without due attention to diet and hygiene. So with the two narcotics mentioned; depression, prostration, agitation, debility, (Woods) of poisoning by the one or the other will furnish indications for administration, the same, indeed, as they would for that of other stimulants, alcoholic or otherwise; regard being paid at the same time to other requirements of each case. To exhibit the one ad libitum as antidote to the other would certainly be worse than malpractice.

Muscarin, a poisonous alkaloid obtained from the Amanita muscaria, a handsome European agaric, which is used in Siberia to produce a narcotic drink, has been discovered by Dr G. Ruckert to be "a perfect antidote to Atropin, and vice versa." Dr Provost of Geneva has likewise made some experiments with or rather them. They would seem to be opposed in their action upon the eye, the heart, the temperature, the function of the kidneys. It remains to be seen what use can be made of this discovery.

Hahneman on account of the rash, and the irritation of the skin

caused by Belladonna suggested its use in scarlatina, as remedy and prophylactic. Dr Woods as much as says this is a homoeopathic delusion. Perhaps - Dr Pereira who is yet an authority rejects the idea in toto; for, he conceives, "twenty cases of failure are more conclusive against the opinion here referred to, (quoting statements of those agreeing with Hahnemann,) than a thousand of non-occurrence are in favor of it." That does not appear to be good logic; if it is, what is to become of the whole practice of medicine and Dr Barrier (1845) recommends it as a

and says; "though successful in Germany and Switzerland, it is not believed in in France. Valleix gives directions for its exhibition but commits himself no further. Dr S. H. Dickson (Elements) says, his own experiments have been unsatisfactory, though there is testimony enough to warrant its use; he recommends it, however, as a safe narcotic for the relief of the irritation and restlessness of young patients in scarlatina. Trousseau and Pidoux upon the same: "Quelque importantes que soient les autorités qui vantent la vertu prophylactique de la Belladone dans le cas, qui nous occupe, nous avouerons que

nous ne pouvons que rester dans le
doute, attendu que nous ne savons
jusqu'à quel point les praticiens,
dont nous réussons ici presque
entièrement les conclusions, avaient
justement apprécié tous les
effets des influences épidemiques."
Nevertheless they advise it to be
given in dose of 60 grain for the
very purpose. Flint considers it
doubtful; the impression of Meigs
and Pepper is decidedly favorable.
Still, certainly a high authority,
considers the prophylactic power
"so far proven, that it becomes the
duty of practitioners to invoke
its aid whenever the disease

breaks out." Dr. J. B. Porcher (1851) after the perusal of four hundred volumes says; "To discard it altogether as utterly indecisive, would be indulging in a spirit of irrational incredulity." The above and much more which might be adduced, shows that the testimony upon the subject is indeed conflicting. The remarks of Bousseau and Pidon could be used on either side of the question. As they say, it is indeed true that epidemics, zymotics, are not thoroughly understood; but, for that very reason, in relation to Revelations, one ought not to be too hasty or too positive in

denying the "prophylactic" powers of Belladonna; and thus a doubt existing the patient should be given the benefit of it, and the trial ought to be made. The objection is made that it is a case of "similia similibus curantur." That is by no means the case; but, even admitting that it is, a fact remains a fact, irrespective of whence it comes or whither it leads. The proverbial uncertainty of scarlatina renders it however extremely difficult to prove the matter; still one ought never to forget or ignore that as malarial fever has its quinine, its prophylactic and remedy, so may scarlatina

have a drug bearing to it a similar relation. Dr. Porcher's observations and remarks carry with them the weight of argument; and are so important that it becomes the duty of every practitioner to give the remedy a fair trial and by carefully collated facts to prove or disprove its claims; until that shall be done it is impossible to pronounce upon theoretical or any other grounds anything approaching to the truth.

Space forbids that anything be said of the anodyne, hypnotic antispasmodic, and diuretic powers of the three remedies, each

which possess them in a greater or less degree. Dinresis has frequently been observed to follow their administration; it is probably indirect and similar to that produced by Digitalis. Of all the uses to which the three have been put, that in iritis seems to be the most important since in other respects their place can be supplied by others [illegible]. To a Doctor Himley is due the honor of having suggested it in that affection, not so much as antiphlogistic, as for the purpose of preventing adhesion of the iris to the capsule of [illegible]; and thus in no disease in the administration

of remedies followed by more marked success; in none can their effects be more carefully watched; more truthfully [illegible]. When one considers the importance of the integrity of the eye, and the number of the organ annually saved by the mydriatics, they become at once all important and invaluable. and among the greatest of all the boons of the Materia Med[illegible]

Of the many other Nightshades I shall say nothing. Enough has been said to show their importance [illegible], and an importance so marked that a study of the [illegible]

order should command itself
to the botanist and the physician.
When the latter shall show the
relations of the vaso-motor nerves
to diseases the range of opium-habit
of certain of the family, which
seem to act especially upon that
system, will be greatly [illegible]
almost beyond a doubt similar
to none. It remains for future
experience, and that precision in
facts which should ever be the
goal of the physician, to develop
the knowledge which we need have
of them, and aid in still further
strengthening the foundations upon
which rests the superstructure

of Rational Medicine, a super-
structure, thanks to a more compre-
hensive knowledge, to a higher cul-
tivation and enlightenment, fast
advancing to completion and
perfection; a super-structure, the
protecting influence of whose sacred
portals is even now seen in
the lengthening of the physical
life of that creation of all creations,
man, whose perfection, a mean
to the Unknown, must ever by that
very fact be to him the end
of ends, the end unto himself.

— Thesis. —

bject) —

"The relation of Chemistry
Therapeutics."

esented to the Faculty of Physic,
the University of Maryland

For the Degree of Doctor of Medicine.

Walter Turpin Swentzell.

Baltimore Maryland.

bruary 1877.

combat successfully the ravages of disease. Nor must we hope that this result will ever be gained. To avert death from a mortal is a simple absurdity, fit, indeed, for the boastings of a Paracelsus, who died with his "Elixir Vitae" in his pocket, a monument of folly; but to post-pone the event of dissolution between soul and body; to cut short in their commencement those series of morbid changes and actions, which, if continued, would terminate in death. So that this last may be the result only of the laws of beings, or where this is impossible, to smoothe the passage to the grave, are the great ends which the physician proposes to accomplish; the decreasing mortality of many diseases, as well as the increasing duration of human life, testify to the advancement of scientific and rational medicine.

We do not design dwelling on Etiology,

but it is our opinion that many diseases are doubtless caused by the extreme variations of the two chemical processes; oxidation and nutrition, which, acting and reacting the one on the other, are always taking place in each particle of the human system during life. Thus, oxidation depends on the nutrition of the blood globules, the heart and the blood vessels which admit of the diffusion of oxygen and the fuel into each portion of the extravascular structure; whilst nutrition depends on oxidation, not only directly but indirectly, by the heart causing a relaxation of the vessels and thus permitting an increased flow of nutritive substances to the parts. It is true that oxidation in the system is slightly obscure, still a theory can be found to sustain our views.

There are diversified opinions, among authors,

as regards the mode in which oxidation takes place. Great importance is attached to the views of Schoenbein, - that every substance capable of being oxidized - first makes the ordinary oxygen into ozone - and that this enters into combination, first slightly (still preserving its properties) and then, firmly, when the ozone loses its characteristics.-

Prof. Stokes thinks that haematoglobulin takes no part directly in oxidation, but that it so exalts the energy of the oxygen, enabling it both, in and out of the body, to do what it could not do in its ordinary condition. It is very evident that the most energetic oxidations occur outside the capillaries where no haematoglobulin exists. It is rapidly becoming clear that a vast class of diseases will be proven to be errors of chemical action - interference caused either by want of regulation, or by the introduction from without, or by the generation within

the body, of substances that increase diminish or change the oxidation which is necessary for the working of the body. Diabetes, acidity, gout, rheumatism, inflammation, fevers, syphilis, hydrophobia etc are among the errors of oxidation.

Nutrition is the chemical process on which the repairs of the body depends. Hypertrophy, atrophy and degeneration are results of the wrong chemistry in the act of assimilation in the different textures, the excess or deficiency of chemical action in the removal of the used-up organs, or in the supply of nutritive material, or the wrong quality of the matter supplied. Assimilation in a great measure depends on the temperature of the body. Even the supply of nutriment to any part depends partly on the chemical changes occurring in that part and by oxidation the used-up organs are made soluble

or volatile to facilitate their removal from the system. The supply of oxygen and nutriment to every part is so immediately under the control of the nerves especially those that act on the heart and capillaries that the chemical processes of oxidation, and nutrition can be accelerated or retarded by the action of the nerves quite as decidedly as by any direct chemical or mechanical action. It is reasonable to presume that the extent and degree of oxidation and nutrition occurring in the human machine are regulated by the nervous force, therefore a careful consideration of the nervous influence, in therapeutics, is absolutely required.

Errors in nutrition lie at the root of many diseases, and the most successful treatment of one of the most destructive, scrofula in its varied forms, is a treatment almost entirely based on the foundation with reference to diet and assimilation.

In health, it is important to know the composition of the food consumed in order to be enable to calculate, on a harmonious working of the whole system, in its varied parts of digestion, nutrition and secretion and to be able to supply any particular emergency which may arise from extraordinary circumstances. But of how much more consequence is this in disease? How important to know how much, and what kind of nourishment should be supplied to meet the wants of the system and leave no surplus, the nidus of further mischief. How important to be able to adjust the kind of food supplied to the assimilating powers of the invalid. How often, in chronic cases do we find that a depraved blood stream is the cause of the evil having its "Tons et Origo" in some mal-adjustment between the food taken, and the processes of

assimilation; when, having gently increased the excretions for a short time so as to remove any accumulation of peccant or ill-assimilated matter, or we slightly shorten the supply of food, vary its quality according to circumstances of the case, use some mild and effectual alterative and find our attentions rewarded by the grateful patient becoming a friend. Were this subject more fully investigated and better understood, the public would never turn homeopathic, to avoid being drenched usque ad nauseam — and patients would soon understand that the advice of a physician is often of more value than his medicine.

The resemblance of inflammation to ordinary combustion has long been recognized, and we are commencing to observe that fever bears the same relation to inflammation that fermentations do to combustion.

In the case of pyrexiae the utmost importance attaches to a correct understanding of the chemical changes which occur in health, and which do happen in disease, and to the influence of remedial agents in preventing, counter-acting, and removing those morbid products which keep up the disease, and by their presence and decomposing influences induce still further disorganization. The treatment of fever is essentially a chemical process. We use evacuants to remove accumulations of effete matters, thereby purifying the residue; we act on one organ to relieve the system of matters which should have been discharged by another; we adjust our supplies of nourishment to the capabilities of the system for the process of assimilation; we supply stimulants to maintain the nerve force under depression; in short, all our proceedings are just as chemical as the mixing of

an ore with a flux to obtain the metal in a pure and separate state. We examine the excretions with the view of fixing their chemical constitution. The knowledge of the chemical changes induced by remedial agents, enables us to understand the success which follows seemingly opposite modes of treatment. In fact, the better we are acquainted with chemistry, with the greater facility, shall we be enabled to adjust our treatment to the exigencies of the case, and the greater will be the success attending our efforts.

In the case of the phlegmasiae, the relation of chemistry to therapeutics is similar, although not quite so prominent as in pyrexiae. An excess of chemical action does originate some of the most serious diseases to which the organism is liable. In order to treat inflammation, we should be well acquainted with its nature. Inflammation is a chemical disease, a state of oxidation beyond

estigation, that portion of the treatment which relates to the febrile state as well as to the functional derangements is similar to pyrexiae and has already been enumerated under that head.

The diseases of the chyropoietic viscera offer some of the most striking illustrations of the application of chemical knowledge to the treatment of disease; many of the primary and secondary disturbances in indigestion are easily controlled in a manner, perfectly in accordance with chemical facts. The use of alkalies in cases of acidity, of pepsine to expedite the process of digestion, of the hypo-sulphites to prevent fermentation with evolution of gas; to say nothing of the adaptation of food to the ability and condition of the digestive powers, or of the employment of exercise for the promotion of the consumption of oxygen and conse-

[illegible] Evacuation of [illegible] [illegible], and of the other Hygienic Measures, are [illegible] examples of the advance made by rational Medicine beyond the range of Empiricism.

In the treatment of lead-poisoning the Physician resorts to chemical means for the Elimination of the poisonous substance. The use of iodide of potassium, as a curative agent, has long been recognized. When this remedy has been administered, its iodine will, chemically combine with the lead, forming the chemical known to science as the iodide of lead, which will be Eliminated from the system to be thrown into the urine. Other remedial agents are sometimes employed, as Sulphuric Acid in small doses, given in a diluted state. After giving the iodide

of potassium - the urine - when tested with H_2S (Sulphuretted Hydrogen), will be found to contain the iodide of lead. - The precipitate that has been occasioned by the H_2S is the sulphide of Lead - which, on further examination, can be most readily determined and confirmed. The iodine can also be detected - by starch - which will reveal its characteristic color. The color will not appear until the iodine has been previously separated by the addition of an acid - for instance nitric acid. - HNO_3. The sulphurous bark can be explained - chemically. When the patient is subjected to the bark, the presence of lead on the skin is rendered apparent by the production of a dark discoloration, this being the sulphide of lead.

In "Bright disease," - it is, only by chemistry can the disease be recognized, only by chemistry can its progress be trac-

ed only by chemistry can the effect of the
different poisonous substances retained in
the blood and in the tissues, in the stop-
page of their chief means of escape be com-
prehended, and only by [illegible] the
action of the different means of promot-
ing recovery be understood. Of all diuret-
ics, digitalis is the only one that is admiss-
ible in acute nephritis. In small doses,
this remedy acts on the nerves that regu-
late the circulation like a stimulant, but
in large doses, or when it is contin-
ued, it diminishes the pressure in the
arteries. As nephritis becomes more
chronic, iodide of potassium may be
administered in diuretic doses. In
ten minutes after the first dose
it is present in every part of the
kidneys and, probably may be
found there for many days after

the last dose has been taken.
Gout and rheumatism are chemical diseases of oxidation, the ~~former~~ latter depending upon the presence of lactic acid, whilst it is generally supposed that the urates and uric acid are the cause of the ~~latter~~ former. These materies morbi that exist in the blood in these diseases must necessarily be converted into a soluble form to facilitate their removal from the system. This great end can only be attained by chemical means. Many cases of gout are entirely relieved by the free administration of Colchicum, this remedy stops the excessive oxidation that is set up in the parts where the acid and acid salts are most liable to accumulate. It acts by stopping inflammation through the influence of the nerves on the capillaries. The rational objects of treatment are to neutralize and eliminate the morbid prin-

One relation in particular that chemistry
has to therapeutics, is the action of medi-
cines and remedial agents. Our knowledge
is as yet limited or too imperfect, and,
while we can easily explain the action
of some remedies, it would be found
rather difficult to give explicitness to the
chemical action of others. The knowledge
of the modus operandi of our remedies is
similar to the acquaintance with reagents
of the chemist, and the better they are under-
stood, the less shall we be guilty of
pouring medicines, of which we know
little into a body, of which we know less.
The physician is oft times called upon to
relieve the train of symptoms or salivation,
caused by the ill-effects, or excessive use of
that potent remedy — mercury. After this
agent has long been continued, it is known
to enter or pass into the structures of the tis-
sues, producing disastrous consequences.

under these circumstances, if iodide of potassium be administered, it will cause the immediate solution of the mercury, enabling it to gain free exit from the system which can be promptly eliminated through the kidneys. The iodide of mercury enters into chemical union with the iodide of potassium forming the soluble compound - iodo-hydrargyrate of potassium, if this is not the case, we have but one other hypothesis to advance, - that is, the mercurial compound which is found in the system, is converted into a soluble compound - as a result, of the direct action of the iodide of potassium upon the mercury - causing the iodide of mercury - to be held in solution by the iodide of potassium.

Another instance of the chemical action of an agent can be cited. When the ox-

lic or oxalate of lime diathesis, with the sub-
stance detected in the urine, is perfectly dis-
cerned, the patient should be put upon the
Nitro-Muriatic acid, - It is most readily pro-
ved that this acid, (Nitro-muriatic) has a direct
chemical action, in oxidizing the oxalic
acid ($C_2H_2O_4$) converting it into Carbon-
ic acid (CO_3) and water (H_2O) both of
which Easily find a passage from the
organism.

Lithotysis is strictly a chemical process,
having for its object the solution or disintegration
of calculi, It is accomplished by means
of those reagents that have a chemical af-
finity for and solvent power over the de-
posited phosphatic or lithic calculi. The
alkalies, notably the Carbonate of lithium,
when administered, appear to exert a more
or less influence in effecting the solution of
the lithic acid of the calculi, producing the
lithate (urate of lithium - when the lithium

[illegible] been used. The phosphates of the [illegible], are made to undergo solution by the strong mineral acids, - preferably the Nitro-Muriatic acid, in virtue of the Chlorine contained in this acid, which is [illegible] to disengage, or set free when the acid is brought into contact with a re-agent which has a chemical affinity for the chlorine. It is generally supposed that this is the circumstance - by which the metal, - gold is converted into a salt of that metal (chloride of gold Au (3)). It has long been recognized that neither Nitric nor Muriatic acid, when in a separate state, would act upon pure gold, but when these two acids (Nitric & Muriatic), are brought to-gether, the Nitro-Muriatic acid, or Aqua Regia, is the resulting product, which is capable of acting chemically as stated above.

the action, of the alkaloids, and of the oxides and salts of metals, is enveloped in the deepest mystery. Yet the use of the preparations of Iron arsenic, iodine and the various alkaloids, morphia, quinia, strychnia etc, is so well understood that they are deemed safe and reliable agents in the hands of the educated physician, and disease disappears so continually under their use, that any question of cause or effect ceases to be entertained.

Until lately we possessed no definite knowledge of the diffusion of medicines, after they enter the circulation, it has been demonstrated to us that certain food or medicines pass through the walls of the capillaries and through the membranes of textures, also cell walls, as readily as though no wall or membrane intervened between the blood & the parenchymatous, or intracellular fluid.

The great functions of medicines are chemically to effect qualitatively or quantitatively, first, the working, and secondly, the repair of the organs and structures of the body.

Medicines are incapable of creating or annihilating any force, but they can carry latent energy into the various parts of the body and they may become active either by increasing oxidation, nutrition, secretion, sensation ~~and~~ or motion; or by altering the conditions necessary for the conversion of latent energy into active force.

We have stated elsewhere that many diseases are caused by the extreme variations of oxidation and nutrition. These two processes are greatly influenced by the chemical action of medicines; that is oxidation and nutrition can be effected in such a manner that either

the one or other may be directly or indirectly promoted or retarded.

Of all medicines, that can be administered for the promotion of oxidation, whether of sugar or fat in the body, iron, its derivatives and alkalies are the most energetic. - Iron or the ammonia-citrate of iron, with excess of ammonia or other alkali, is generally admitted to be the best remedy for diabetes mellitus, the disease in which an excessive accumulation of sugar exists in the kidneys, which can neither be appropriated by the system nor eliminated entirely from the organism. The remedy acts chemically by promoting the oxidation of the sugar, converting it into its volatile constituents which can easily be removed by nature in her efforts to eject all soluble or volatile matter - foreign to the body - from the organism.

When iron is used properly, it seems as though its progress could be watched, and its benefits accurately determined by the improved condition of the blood.

After taking a soluble salt of iron, in a few hours a part of it, is converted into a sulphide, or is reduced to the state of oxide in the bowels and then losing its solubility and power of diffusion it is passed out as perfectly useless as if it had never been taken. Another portion passes into the urine exerting a tonic influence on the mucous tract which it travels, previous to its exit from the kidneys, whilst the remaining portion diffuses from the liquor sanguinis into every texture and into the corpuscular element of the blood, making a greater formation of haematoglobulin,

Alkalies furnish, out of the body, as well as within, - marked evidence of assisting in oxidizing actions; but many substances are included in this class - probably no two alkalies have the same degree of action, although all have a general resemblance. Oxygen as well as ozone may be looked upon as direct promotes of oxidation. Chlorine, iodine and bromine substances closely related in chemical properties, promote oxidation in the body by taking hydrogen from water (H_2O) - with liberation of oxygen.

The strong mineral acids - (Nitric acid, HNO_3, and sulphuric acid (H_2SO_4) have an exceedingly strong chemical affinity for water with which they unite when brought in contact with the living tissues, death or oxidation rapidly taking place. The thoughtful surgeon recognizes this fact when he desires to remove or cauterize formations or growths - as for instance a chancre

[illegible] salts of zinc, copper, antimony, and mercury have a powerful chemical action; of all these, the mercurial preparations are the most remarkable on account of [illegible] that has been given them in the treatment of so many diseases. The mercurial salts belong to the class of irritant poisons - substances that act chemically on the organic substance with which they come in contact, causing increased chemical action.

Oxidation may be increased by those medicines which increase the frequency or force of the heart's action; in consequence the blood will be sent more quickly through the capillaries and the greater rapidity of chemical circulation through the various textures will be produced. In this way stimulants produce their effects. Digitalis, the cardiac tonic, acts upon the sympathetic and a branch of

the ninth pair of nerves - the nerves which regulate the action of the heart, causing the heart to act with more power in propelling the blood through the arteries then through the capillaries.

The effects of so comparatively uncomplex a body as prussic acid, in bringing all action to rest, is almost too rapid to be investigated experimentally; but the effects of more slowly acting medicines, as for example - Morphia, show quite as decidedly the mode of action of some of the most important agents that are used in the profession. Opium impeds oxidation, by stopping chemical action, and lessening the circulation of the blood by acting on the nerves which control it.

The anti-phlogistic treatment is the retardation of chemical action. As oxidation is the chief of all the chemical motions going on in the

body, the anti-Chloristic [illegible] [illegible] the [illegible]-
cess of excessive oxidation, and of all the act-
ions arising from it.
The astringents as gallic and tannic acids
etc, are strongly deoxidizing agents the salts
of potassium, ammonium and lead, probably
the preparations of barium, and zinc &c,
have a somewhat similar action in the
retardation or stoppage of oxidation.
Our knowledge is so deficient regarding
the way in which nutrition takes place,
that so clear views of the chemistry of
the repairs of the body can be obtained,
still the fact is obvious that some food
and medicines, are capable of promoting
or retarding nutrition in the formation of
the different materials of which our or-
ganism is composed.
It is impossible to draw any distinct-
ion between some food and medicines.

the well-known medicine-Cod-liver-oil, is as necessary food, as starch, sugar, albumen and salt-then again iron, oxygen, water and salt-are food, as well as medicines.

In anaemia or Spanaemia, how is the food, and medicines, most needed; the supply of blood is not only increased, but it is made richer, better, able to perform its function in the repair of the tissues.

In, diabetes, or in fact, any disease, characterized by a loss of nutrition, and power; we resort to those remedies that promote nutrition-such as the tonics and restoratives.

Also food when judiciously administered readily assists nutrition. Where there is muscular waste from exercise, work or other causes, meat is the special substance.

Gelatine naturally supplies the wasting cellular-tissue. The nutrition of

the vascular substance is formed by the appropriation, of the phosphate and carbonate of lime to the bone material.

Lead and Arsenious acid and it is supposed silver, Mercury etc, can combine with nerve, skin, or other texture, rendering them incapable of going through changes, on which their action depends. Nutrition is directly retarded by an accumulation of Carbonic acid, water, Ammonia and salts, as well as excess of the organic acids. In fact they all act as ferments to the chemical changes on which the process of nutrition depends. The retardation of nutrition can also be brought about by those remedies that lessen the action of the heart, of these, it is said - Strychnia is one of the most remarkable. By experiments, it has been shown, to lessen the frequency of the heart's action, when applied directly to the Vagi nerves. -

It acts also upon the ganglia. Digitalis first stimulates, and tones, and then paralyses the regulating nerves,- stopping the heart's action. Quinia - it is presumed - first stimulates and then lessens the action of the motor nerves of the heart. Morphia is an excellent Example of the medicines that act on the Cardiac nerves. It acts also on the Capillaries, first as a stimulant, and secondly as a sedative or retarder. Bleeding, starvation and excess of Mineral or even water ~~acids~~ impedes the process of nutrition. In conclusion, the progress of all accurate knowledge of the action of medicines, depends on Exact Chemical & Physical experiments, & by the perfection of these alone, will the practice of medicine lose its doubts and difficulties, disagreements and deceptions, and become esteemed by all, as the art that can confer the highest benefit upon suffering humanity.

B D

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Thesis

on

Scarlet Fever

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Scarlet Fever.

Scarlet fever, sometimes called scarlet rash, or scarlatina, is one of the most frequent and fatal of contagious diseases, occurring generally in childhood, although by no means uncommon in adults. It is an exanthema, attended with more or less pharyngitis. Owing to the great difference in character and severity of the symptoms

several varieties of this disease are recognised by writers, some marking two, the mild and grave; others the normal and abnormal; while a third class, among whom is J. Lewis Smith, prefer three divisions, viz, the regular, irregular, and malignant.

Symptoms - Regular Form. Scarlet fever generally has an abrupt beginning, so that the exact time of its commencement is often known. The premonitory symptoms, if there should be any, rarely consist of more than a dullness, or sense of fatigue, which is often so slight as to attract

little notice. Fever, usually intense, then supervenes, accompanied by cephalalgia, possibly delirium, anorexia, and thirst; in some preceded by chilliness, or even a distinct chill. The pulse rises to 110–120, or more per minute, often accompanied with symptoms showing that the cerebro-spinal system has been involved to a very considerable extent.

Vomiting usually occurs once, or twice during the first twenty four hours of the attack, and then passes off, but is sometimes persistent, indicating a severe form of the disease.

The rash appears ordinarily during

the first six or eighteen hours after the commencement of the above symptoms, and is noticed first about the neck and ears, gradually extending to the shoulders, trunk, arms, and finally, reaches the lower extremities a few hours after its appearance on the neck. The degree of redness varies in different parts, some retaining the natural hue, in mild cases. When pressure is applied to a part the rash disappears, but in the mild type of the disease, it speedily returns up on the with drawal of the pressure; and slowly in the severe forms.

Pharyngitis, with more or less stomatitis, and tonsilitis sets in early in the attack, and continues through out the disease.

The Schneiderian membrane is also involved, and a thin irritating discharge takes place from the nostrils as the disease progresses. In the early period of the disease the temperature ranges from 102°. to 107°. according to the violence of the attack. The respiration is not much increased, except in cases where a complication exists.

The severity of the symptoms is undiminished for four or six days, when they begin to abate gradually, convalescence beginning about the close of the first or commencement of the second week, in

favorable cases.

Then comes the period of desquamation, during which there is exfoliation of the epidermis over the entire surface of the body.

Such is scarlet fever when it pursues its normal course, but the frequency of complications and sequelae, in mild as well as severe cases always renders the prognosis doubtful.

Irregular Form. The irregular form of scarlet fever is generally caused by some disordered state of the system, for example, when the patient is suffering from any disease, which causes an un-

due afflux of blood to an internal organ, there is little or no eruption. Scarlet fever occurring the second time in an individual is more apt to present irregularities than in the first attack, and this is more marked, the shorter the interval between the two.

Malignant Form. This form occurs more frequently in some epidemics than in others, and is characterized by violent symptoms from the onset, especially those relating to the nervous system; many cases terminating fatally in two or three days after its invasion, as if over come by the virulence

of the scarlatinous poison.
The rash is dusky, returning very slowly after pressure. There is great elevation of temperature, the thermometer ranging from 103° to 107° in the axilla. The pulse is high from the first averaging from 130 to 160 beats per per minute. After the first few days the pharyngitis becomes very severe, and is accompanied by inflammation of the lymphatic glands and connective tissue around the angle of the jaw, resulting in difficult and painful deglutition, which materially interfers with nutrition.

Complications. — Complications are met with occasionally in all forms of scarlet fever, but occur oftener in those of a malignant character. Clonic convulsions constitute the most common and serious of the complications affecting the nervous system, and are more fatal when occurring after the eruption has completely developed. Gangrene sometimes occurs as a result of severe pharyngitis, and is one of the most fatal complications of scarlet fever, rarely terminating favorably, unless very slight.

Entero-colitis and diarrhoea are also met with during the course of the disease, and add much to the exhaustion of the sufferer, thus by rendering the prognosis much more grave.

Another and common complication of this affection is inflammation of the serous membrane; which being often circumscribed in character, may be entirely overlooked for some time after its occurrence.

Sequelae. — All of the affections above described may also occur as sequelae, as well as complications, but there is

another frequent & serious sequel, viz, nephritis with albuminuria, which may occur as a complication; and is due to the direct poisonous influence of the scarlatinous virus upon the kidneys; although exposure to cold is a strong predisposing agent, by which this affection is often developed. Inflammation of the ears is often observed, as a sequel, giving rise to otorrhoea, & occasionally resulting in complete, and permanent deafness. This too may commence as a complication

Anatomical Characteris.— As the great majority who die from this affection, have the lesions of a complication also present, it is very difficult to determine which are due solely to the one, or the other. Often there is decided congestion of the lungs, brain, and its membranes; the spleen is enlarged and softened; the Peyerian, solitary, and mesenteric glands also being enlarged. In some malignant cases when there is feeble cardiac systole, coagulation of fibrin occurs, which is the immediate cause of death.

Nature. That Scarlet fever belongs to the class of contagious diseases, there seems little doubt; as statistics show that when epidemic, the first cases can generally be traced to the public schools, where children coming directly from the bed side of those suffering from this malady, are thrown in contact with others, thus by spreading the poison from house to house. In the same manner it can often be traced to the visits of physicians who are attending such cases elsewhere. Besides its infectious character, Scarlet fever is also inoculable, but this does not

seem to diminish the violence of of the disease in the least. Often it is communicated by those who seem to have recovered from the fever several weeks previously; or by entering a room in which there had been a case a month previous, although every precaution had been taken to get rid of the pestilential poison.

The period of incubation is generally from three to eight days, but cases are on record where it varied from several weeks to a few hours.

Scarlet fever rarely occurs in infants under three months of age,

and is generally met with in those between the ages of three & ten years. Adults are rarely subjects of the disease, although not exempt by attacks in childhood. Parturient Women seem more liable to become infected by the scarlatinous virus, than others.

This disease is generally Epidemic occurring but once, although sporadic cases are occasionally met with, and there are cases recorded in which as many as three distinct attacks were seen in the same individual.

Diagnosis. A positive diagnosis is often impossible in the beginning.

of an attack of scarlet fever; but if the child has been exposed to the disease a few days previously, and there is no appreciable local lesion, the pulse rising to 110-120, or more, with a temperature of 102, 103, or 105, the great probability is that scarlet-fever is the disease; especially if there is vomiting, and an undue degree of redness upon the fauces.

The appearance of the rash generally confirms the diagnosis; although we meet with similar eruptions in other affections, the sudden onset, and continuance of the other symptoms, together with the

greater severity of all of the symptoms, except in the mildest or irregular cases, will after a few days confirm the diagnosis beyond all doubt.

Prognosis. The mortality is far greater in some Epidemics, than others; statistics showing it to be not more than one in twelve, in mild forms; where as it reaches one, in two, three, or four in the severer types. As in most other diseases, it is more fatal in the city, than the country, also in hospital than in private practice. A greater number die from the complications,

and sequelæ, than from the primary disease itself; and renal affections rank at the head of the list. The liability to the occurrence of complications & sequelæ should always prevent too favorable a prognosis even in the mildest cases.

Treatment. Very little treatment is necessary, in the mild form of scarlet-fever, occurring without complication or sequelæ. If there is constipation, a mild cathartic is indicated, and a simple diaphoretic generally given is sufficient for the case, with proper attention to hygiene.

Depletion is rarely if ever admissible; but in those cases of a severer type, sustaining measures are more or less called for, from the very onset of the disease. In rare cases of robust children, where there seems great danger of cerebral congestion, a few leeches applied to the temple may prove beneficial; but generally speaking sufficiently sedative effect can be gotten by the administration of a few doses of bromide of potassium; the application of cold to the head, and sponging the face & hands with cold water.

the carbonate of ammonia, in combination with tonic is much used through out the attack, and is considered one of the most valuable remedies. When there is much itching of the skin, the parts should be wiped over with glycerin containing six or eight drops of carbolic acid to the ounce, which ordinarily gives great relief, and may be applied to entire surface, with the effect of diminishing the general temperature, and the rapidity of the pulse. The sulphate of quinine is considered one of most useful remedial agents in

reducing the frequency of the pulse, and lowering the general temperature, in the malignant form of the disease, and should be given in decided doses several times during the day. Hot mustard baths are highly recommended as stimulants to the capillary circulation, and in quieting the nervous excitement often found in the commencement of convulsions.

In most patients the pharyngitis demands attention, and although the direct application of remedies to the faucial surfaces is considered by far the most important part-

of the treatment, yet the use of external applications is often beneficial. The best of these is a thin slice of salt pork, stitched to a single thickness of linen, and applied from ear to ear, or if this is objected to, camphorated oil may be substituted. This should be continued through the fever, and whenever too much soreness is produced, linen soaked in sweet oil may be substituted for it, for a day or two.

Saturated solutions of chlorate of potash, containing three or four drops of carbolic acid to the ounce, form one of the best gargles, and should be used in mild cases, but in those

of a severer type; and in very young children, the direct application by means of a camel's hair brush, is by far more effective. The liquor ferri subsulphatis in the proportion of about two drams to the ounce of glycerine containing from four to six drops of carbolic acid, is much used in this manner, and is very efficient in removing any viscid secretion, and reducing the turgescence of the inflamed parts. There is often an accumulation of mucus in the pharynx, or larynx of the infant, which must be removed by swabbing the throat, as soon as discovered, when it will

be partly removed by the wash, and partly expectorated by the violent cough produced by the presence of the instrument in the throat.

The diet should be nutritious, consisting of animal broths and the like. Stimulants are called for in some cases, and should be administered regularly in quantities proportionate to the age of the patient, by which the scarlatinous virus is some what counteracted, diminishing the tendency to convulsions & coma.

The greatest care should be taken in regard to the hygienic management of the patient during convalescence,

as very slight exposure may re-
sult in the most disastrous
consequences to the patient, from
the inflammations which have
been described.

[illegible]

[illegible]

Chorea,

[illegible]

S. [illegible] Hoffman.

Class 70-7

Thesis
on
Nasal Catarrh
by
Geo. F. Terrell
of
Georgia
Session 1876-77

Nasal Catarrh

Nasal catarrh, or coryza, is an inflammation, (acute or chronic) affecting the mucous membranes of the nasal passages, and may extend into the sinuses communicating with them.

Etiology.— The causes of coryza are best studied by dividing them into two kinds- predisposing and exciting.

Predisposing. The very young and old, are much more liable to coryza than the middle age adult, natural feebleness of constitution, the existence of rachitis, as tonsilitis or tuberculosis, want of exercise and fresh air are all predisposing causes, to this, as to most other diseases.

Vices, such by lowering the vital resistance of the nerves and blood vessels, so that an exciting cause produces a disorder, which in the adult of healthy and robust habits would have no effect. Exciting causes are numerous. Local irritants such as dust, fine particles of stone from stone cutters chisels and acrid gases. Nasal catarrh often accompanies or precedes many constitutional diseases, especially the eruptive fevers as measels, scarlatina &c. But of all the exciting causes exposure to sudden change of temperature as from warm to cold, is the most frequent. This leads me to ask, how does cold, produce, inflamation of the respiratory organs?

To answer this it will be necessary to divide them into two portions, viz, those above and those below the larynx.

II. Those above the larynx are known as the nasal passages and are often spoken of as the respiratory organ, that is, it is the place where the air that is used for respiration undergoes the process of warming and also of purification, before it enters the lungs. The nostrils are the outermost sentinels, watching over and protecting those delicate and all important organs the lungs. In truth, trust is confided in them when we consider the variable temperatures man is constantly subjected to in our North ern climates. These organs are two in

number, right and left. They are situated above and seperated from the mouth by the hard and soft palate, running backwards from the anterior nasal openings; between the superior maxillary bones, seperated from each other by the vomer and catalagenous substance. Their surfaces are convoluted, so as to allow the greatest possible exposure of the air to the blood vessels, (pipe conveying a heated fluid,) which are so numerous in the nares.

How is it that Cold Produces Inflamation of these Organs? Not a single inflamatory trouble is there about these organs that is not refered to cold as one of its causes and yet I have never seen

an attempt to explain how cold produces an inflamation of the respiratory organs, though I have often known it to be used to prevent or reduce inflamation. We have seen above that they are sentinels whose duty is to watch and prevent the air from going to the lungs at different temperatures, that is, although man be constantly breathing air of varying temperatures this air shall always enter the lungs at about the same degree. Now the force of the sentinels is represented by heat and it is evident that if the enemy, cold, be increased, it will be necessary for heat the force of the senti-

nels to be increased, if not then air must pass into the lungs at a lower temperature than normal. Should we represent the normal temperature by 90°F. at which the air should pass through the larynx, and the inspired air by 70°F. capable of being raised by H. to 90°F. we must have H. increased when the inspired air is only 20°F. else the nasal passages will fail to do their duty and the lungs must suffer. How is the heat of the nasal passages increased? We have seen above that the walls of the passages are traversed by a heated fluid, the blood contained in vessels whose calibers are capable of chang-

ing at a moments warning. The vaso-
motor nerves of the lungs and nares
are so arranged, (nerved,) that when
cold air enters the lungs it acts upon
their vaso motor nerves in such a
way as to produce a reflex action
upon the vaso motor centers of the
vaso motor nerves of the nares, which
causes the centers to diminish their
influence, sent through the vaso
motor nerves, upon the vessels of the
nares, and, thus, allow them to dilate,
which dilatation permits more blood,
and hence more heat to be carried
to the nasal passages.

How does cold produce inflammation of
the nasal passages? I have also al

tempted to explain the function or one of the functions of the nares, and upon that theory will expain the production of inflammation by the history of a typical illustrative case. Jas. D. age twenty five, bankers clerk, had been constantly confined to a warm room, his nasal passages had accomodated themselves to a warm atmosphere for a long time, he was sent in an open carriage twenty miles the atmosphere being only 24°F. When he returned he was suffering with a severe cold or catarrh. How was it produced? The nares not having enough heated fluid sent to them to heat the

air allowed the air to reach the lungs at a lower degree than normal, which so acted upon their vasomotor nerves as to send a reflex influence to the vasomotor centers of the nares which so paralyzed them as to take off all or most of their influence upon the nasal vessels, which being taken away allowed them to dilate and receive more heated fluid, so that the sentinels might the more easily overcome the enemy (cold). But the trenches being over filled, and the commanders having been killed disorder prevailed and as a result inflamation ensued.

II. How inflamation of that portion below the larynx is produced does not

come up for consideration in a thesis on inflammation of the nasal passages: Clinical History. Coryza begins with a dryness and titillating or pricking sensation of the membrane lining the nasal passages causing frequent sneezing, soon followed by a watery secretion of a saline taste. It gradually becomes thicker and more tenaceous having a yellowish or greenish yellow color. There is sometimes an erythematous eruption on the upper lip. If the attack is mild there is little discomfort. But in severe cases the inflammation extends to neighboring sinuses, causing a feeling of fulness and often severe pain in the forehead. If the eustachian

tubes are involved there is roaring and more or less deafness. Sometimes the temperature is very much increased with a feeling of depression and anorexia.

Anatomical Characters. The blood vessels of the membrane lining the nose are surcharged with blood, the membrane itself is oedematous thick and red, the redness extending in severe cases through the nasal walls. In the chronic form the membranes becomes very thick and rough and in severe cases nasal polypi may be produced, giving to the voice a nasal character.

Prognosis. Acute coryza though

erally a harmless disease is sometimes dangerous to ill nourished and feeble infants. The obstruction to their nasal passages makes sucking difficult and it is often necessary to feed them with the spoon to prevent them dying of inanition.

Treatment. From what we have said of the causes it seems, a priori, that the inhalation of warm air charged with watery vapor is the remedy in those cases produced by cold. This mode of treatment is empirically recommended by J. Lewis Smith. In his treatment of acute nasal catarrh he says; inhalations through the nostrils of vapor of warm water or steam from hops

often give relief; occasionally it is an important part of the treatment. The use of astringent and narcotic powders is believed to produce abortion in some cases. Diaphoretic drinks through the day, confinement to a warm room, the air of which is moist and a hot foot bath along with a Dover's powder before going to bed, followed next morning by a laxative is most likely to cut short the affection. So trivial is the disorder that patients generally treat themselves by the use of a good toddy before going to bed. If there is a tendency to eczema of the upper lip it should be protected from

the acrid secretion by the use of some mild ointment. The chronic form is often very obstinent to treatment. The accompanying disorder should never be overlooked and the local disorder alone treated, but the two must be treated at the same time. The scrofulous cachexia should be treated with cod liver oil and syrup of iodide of iron internally. Numerous applications are recommended for local use, among the best are, perhaps painting the mucous membrane with a solution of nitrate of silver or dusting it with mercurial powder

Thesis

on

Chronic Ulcers

by

Geo J Rowe

1877

Ulceration,

is the name given to the breaking down of tissue, or molecular death of an inflamed part. It is divided into Two distinct stages; that of destruction, and that of reparation: the one being the direct opposite of the other. In reality Ulceration has but one stage; for in the stage of reparation, we have a deposit of tissue, which could hardly be considered ulceration in any form. Some writers speak of Ulceration in connection with the destruction of tissue attending suppuration within the substance of the parts. Mr Paget thinks however, that it is better to call this, 'Interstitial absorption',

and restrict the term Ulceration, to the process as we find it on free surfaces; where there is absolute removal of effete material. It is difficult to separate the causes of ulceration, from that of sloughing and gangrene: they being so closely allied together. Predisposing causes of ulceration, are those that interfere in any way, with the nutrition of a part. A feeble circulation; such as often exist in the lower limbs, in the alae of the nose, and in recently cicatrized parts. As age advances nutrition becomes impaired, the circulation less active, the parts become disintegrated from any slight cause, and a tendency to ulceration is

the result. Ulceration usually commences in the center of an inflamed part, where the vitality is supposed to be the lowest. Here a small sore forms which exudes unhealthy pus. The sore continues to enlarge so long as the inflamation continues; for repairation can not go on, while there is inflamation. The degree of impaired vitality, governs the grade of inflamation that is required to produce ulceration of a tissue. If the vitality of a part be sufficiently impaired, it may pass into a state of ulceration, without any inflamation; or with so little, as not to be discernable. In such a case, the ulceration arises from disintegration, caused by impaired nutrition.

As the result of violence, we may have ulcers situated on any part of the cutaneous surface. When they arise from specific affections, they occur in particular places; as on the lips, penis, tongue, &c. But when they occur spontaneously, so to speak, non specific in character, they usually occur on the lower extremities. We find them on the lower part of the leg most commonly, on account of the slowness of circulation; the thinness of the skin; the venous congestion; the weakened and dilated condition of the walls of the bloodvessels. Ulcers may be divided characteristicly into specific and non specific: or in other words, classified, either according to the

constitutional condition of the patient
or according to the ulcer itself. Thus
we read of the Eczemitous, Cold, Gouty,
Strumous, and Cancerous ulcer.
And, again, of Healthy, Irritable,
Indolent, Weak, Inflamed Varicose &
Hemoragic ulcers. We can readily
understand, that an ulcer may
be seriously complicated by an attack
of gout, in a person so disposed.
Consequently any treatment to be
succesful, must have regard to the
gouty condition, as well as to the ulcer.
No art is required to diagnose an
ulcer, when seated on the skin.
But it is not always so easy when
situated on the mucous surfaces.
Enlarged follicles, and aphthae &c

are apt to be mistaken for ulcers.
The aspect of the ulcer, and the character of its granulations, and of its discharge are notable indications of the state of the health of the patient, as well as, of the local disease.
The simple, healthy ulcer may be considered the type of all other varieties. And to this all others must be brought, in order to affect a cure. We see healthy ulcers, in any superficial wound, healing by second intention. Such an ulcer naturally tends toward a cure. The water dressing, or greased cloth, with an elevated position of the parts, is all that is generally required. If the granulations exuberant, touch them with a little caustic -

or if too small and closely set, use a strong carbolic application instead of one of milder form. The inflamed ulcer is usually met with, in those of full habit; and generally arises by irritation of a simple ulcer. In treating them enforce rest; elevate the parts, and use soothing applications either warm or cold. The sloughing ulcer may be considered an aggravated form of the inflamed variety; met with in ill nourished individuals. The treatment consists in concentrated nutriment with stimulus if necessary; and anodyne fomentations. If there be great tendency to spread, it should be treated as a case of hospital gangrene. In the weak ulcer the granulations

are large and seem distended. This form requires improved hygene, stimulating and astringent dreping, with support by a bandage. The irritable ulcer is characterized by pain. In this sometimes, the resection of a nerve is required. Otherwise the treatment is similar to the inflamed ulcer. The indolent or callous ulcer is by far the most common form of ulcer. This variety is surrounded by an elevated ring of dense tissue, which sometimes has to be entirely removed with the knife to accomplish a cure. The application of a blister sometimes suffices. The most plausible treatment in my estimation is the straping of the parts with adhesive plaster

as tightly as the patient can stand it; the straps to be removed, and others applied every day or two. It occasionally happens, that ulcers prove incurable. In such cases the question of amputation arises: and under certain circumstances is justifiable. In the local treatment of ulcers, the Surgeon must be guided by the peculiar conditions presented by the ulcer. But there are a few points that should receive attention in all cases. The first thing to be done, is to reduce the inflamation, when present: for repairation action can not go on while inflamation of any consequence exists in the parts. Secondly, congestion must be prevented by keeping

the parts at rest, and in an elevated position. Thirdly, Local applications suitable to the nature of the case should be employed. The Esmark bandage is without a doubt in my mind the bonanza treatment for non specific chronic ulcers. And a great auxilery to a majority of those specific in character. But to be a success it is necessary that it be regularly and carefully applied. I have seen it used often, and have used it to some extent myself; in ulcers of from Two to Eight years standing; and of various forms; viz: Weak Inflamed, Irritable, Callous and Varicose. I apply it as follows: Place a little batting over the Ulcer

for protection and comfort. Begin at the toes, (supposing the ulcer to be on the leg), and apply the bandage as tightly as the patient can bear it; or as tight as usually applied for surgical operations; untill some distance above the ulcer; say Twelve inches. Leave it on for from Fifteen to Thirty minutes, when it should be removed and any ordinary ointment applied. This should be repeated Three times a day, if the patient be suitably situated. If not, the ulcer will improve with Two applications or even one, in Twenty four hours; although not so rapidly. I have had but Two opportunities for testing the efficacy of the Esmark in varicose ulcers.

In both instances the ulcers healed, although more time was required than in some of the other forms. And in one instance there was a tendency to reform; the patients avocation being such, as to keep him on his feet almost all of the time. I have also seen the happiest result from the Esmark, applied to joints that continue to be painful and weak, an unusual length of time after a violent sprain or rupture of ligaments or dislocations where the parts remain enlarged, and have become callous. In the callous form of ulcer of long standing, it is better to strap the parts tightly with adhesive plaster for a few days untill the parts soften down;

and then commence with the bandage.
No one doubts that a prominent cause
of chronic ulcers is the sluggishness of
the circulation through the affected
parts; caused by the dilated and
weakened condition of the bloodvessels.
The secret of success with the Esmark
bandage seems to be in the complete
removal of the impure and poisonous
blood from the parts. And at the
same time affording support and
rest to the afflicted bloodvessels
On removing the bandage a supply
of pure fresh blood is allowed to
pervade the parts. Once in a while
we meet with an ulcer, the healing of
which jeopardizes the life of the patient.
We read of instances in which the

introduction of a seton, or an attack of variola, was almost undoubtedly the channel of escape for "Phthisis Pulmonalis."
Why might not the chronic ulcer fill the same office? Therefore I think it proper for every Physician to consider well the consequences before attempting a cure.

Geo T Rowe

Jan 1st 1877

A

Thesis on

Scarlatina,

submitted to the

Faculty of the University

of Maryland

by

H. E. Freeman

Class of 1876-77

Scarlatina

This disease, called from the color of the eruption scarlatina, is both an epidemic, and contagious, fever. It is characterized by a scarlet rash, which, in the majority of cases, appears during the first twenty four hours of the attack. It varies greatly in regard to frequency and forms. In its mildest forms it is a trivial affection; in its severe forms few diseases are more appropriately styled malignant. Cities and rural districts may remain in apparent immunity for years, and then be invaded by this insidious disease and thousands of their inhabitants fall victims. It is greatly influenced by its epidemic nature. A mere glance at the tables of mortality for any of the large cities will clearly show

to what extent it is influenced by this cause. Thus we find in the city of Philadelphia that from 1813. to the year 1817. not a single death occured from this disease. While in the year 1856. there were 992, and in the year 1861. 1190 deaths from scarlatina.

Forms — All practitioners concede that there are different forms of this disease Most authors enumerate three. Viz- the Simple, Anginose and Malignant. But while a large majority agree as to the classification, they by no means coincide in their discriptions of these different forms Some include in the simple form only the cases in which there is no affection of the fauces. While the anginose form embraces all in which there is any throat affection whatever.

Others describe under the head of simple form. Those cases in which the throat affection is mild, and consider the anginose form to be that in which a pseudo-membranous angina occurs. And in the descriptions of the malignant forms there appears as much discrepancy as in the simple and anginose forms

Thus some include under this term only the rapidly fatal cases, while others those also which are rendered malignant, by the occurrence of pseudo-membranous angina

This want of coincidence is indeed much to be regretted, since it places obstacles in the way of a proper study and appreciation of this important disease.

Drs Meigs and Pepper adopt a different classification from that given above

They make only two forms and designate them as the "mild" and "grave". The difference between the two forms being merely the difference in degree of severity. This I am sure is the better plan. For my own experience though not very extensive forces upon me the conviction that it is quite impossible to refer some of the cases we meet with in practice clearly and satisfactorily to any one of the forms described in most books. Besides this the old classification is faulty in another respect. For believing as we do that the inflammation of the mucous membrane of the fauces is a leading feature in this disease, we do not hesitate in saying that the simple form of some authors is an anomaly. For we are decidedly of the opinion that no case of scarlet fever ever yet existed without

the throat being more or less involved.
We by no means contend that this is a prom-
-inent symptom in all cases. But we
are satisfied that if the throat be exam-
-ined it will be found to be more or less
inflamed, even when the patient does
not complain of this trouble.

Of fifteen cases that came under
my own observation in the spring of
1874 this symptom was without an
exception present in every case, though
in some it was slight; but was sufficiently
obvious in all.

Causation — In the present
state of our knowledge, Scarlatina
appears to be propagated both by conta-
-gion and epidemic influence
And while we admit that there

are some authors who doubt the contagiousness of this disease; yet there seems to me to be indubitable proof that the disease is directly communicated in this way. That a number of children may be and are directly exposed without their systems becoming contaminated with the "materies morbi" is but the experience of all practitioners. But is this not true of all diseases admitted to be contagious. Have we not all known persons to expose themselves to measles Hooping cough &c without being affected in the least; if this then be so. If persons escape after being exposed to these diseases, why should there be any cavil as to the contagiousness of Scarlatina We readily concede that it is less highly

contagious than some other diseases!
but from the abundance of evidence
adduced by various Authors it must
inevitably be classed with diseases char-
-acterized by contagion. As to the
epidemic nature of Scarlatina a simple
glance at the results afforded by the tables
of mortality for any of the large cities will
satisfy the most casual observer that it
is possessed of a highly epidemic nature
That the disease may be transmitted by
means of fomites is unquestionable The
virus may be carried in the clothes of
the physician, nurse or others. And we
doubt not that frequently the disease is
diffused in this way. In one of the
cases that occured in our own practice
the miasm was unquestionably conveyed

in this way. A Lady was visiting a family at the time they were affected with scarlatina, and in three days after her return home, one of her own household. (a boy aged six years) had a well marked attack of Scarlatina He had not been otherwise exposed. There was no case of this disease nearer than eight miles.

The length of time during which the power of imparting the contagion remains in the patient is as yet undetermined Some Authors state that it continues throughout the period of desquamation, and that it puts more active at that time. The infectious miasm attached to clothing &c may retain its activity for months But is rendered inert by a temperature of 212° F.

The period of incubation is shorter in Scarlatina than in other eruptive diseases. But it is very variable. Some authors state it to be from a few minutes to five or six days. Murchison states that it rarely if ever exceeds six days.

In regard to the seasons in which the disease is most prevalent. First in the order of frequency is Spring, then Summer, and fall, and lastly winter

Influence of Age —— Here again we find considerable discrepancy among authors. Some stating it to be most common between five and ten years of age. Others are equally positive that a larger number of children are affected by Scarlatina during the first five years of life. After a careful consideration of the opinions of numerous authors we con-

-clude that a larger percentage of deaths occur under, than above five years of age.

Prof. A Flint states that the disease is most frequent in the third and fourth years of life and that the liability to the disease di-
-minishes rapidly after the fifth year, and becomes very small after forty. The disease is very infrequent in the first month. Though cases are reported at 21 days. Cases have also been reported in which the disease was con-
-tracted in utero, though this must be rare.

In two of the families we attended there were children under a month old. neither of whom were affected in the least, although they were exposed during the entire time. Being much all the time in the room where from three to four of the family were confined with scarlatina

Clinical History

Stage of invasion— One of the marked features of diffrence betwen Scarlatina and most febrile diseases is the suddenness of the attack. In very few instances is it preceded by the usual prodromes of febrile diseases. Though in a small percentage of cases there may be langour, lassitude, pains in the back, and limbs, and slight rigors. But in the majority of cases the patient is in appearent perfect health to within a very short time of the onset of symptoms of a marked nature. Prominently among the earliest symptoms is to be found fever, marked by great acceleration of the pulse, and excessive heat of the skin. Simultaneously with the onset of the fever the patient in the majority of cases complains of soreness of the throat; and in those cases in which the throat is not complained

of at all, if it be examined it will be found to be more or less affected.

Vomiting occurs in the majority of cases. Anorexia is the rule. Thirst is acute.

The bowels are usually in their natural condition; though they may be constipated

The child may be quiet; but more frequently it is restless and irritable. This may be owing to the presence of delirium; but is no doubt frequently owing to an itching tingling sensation over the surface of the body. After a persistence of these symptoms from twelve to twenty-four hours, new phenomena make their appearance. These will be noticed in next division.

Stage of eruption.— Of the cases that came under my observation in the majority the eruption was noticed first on the body,

and limbs, afterwards making its appearance on the face. In a few of the cases it was observed on the ~~body~~ first. Frequently in less than twenty-four hours after the appearance of the eruption it is diffused over the entire cutaneous surface. It appears first in minute dark red points dotted upon a rose colored surface, forming patches of irregular size, which rapidly coalesce, and give to a large portion of the body a uniform scarlet tint. The redness is most vivid and remains longest in situations where the skin is most delicate. It momentarily disappears on pressure, and white lines are produced by drawing a pointed substance over the reddened surface. The amount of eruption is variable. In some cases it is slight. This perhaps occurs often when the throat

affection is severe. The eruption is more marked during the febrile exac-
-erbations, and is generally more vivid in the evening than in the early part of the day. The surface of the eruption is smooth to the touch, unless there is an enlargement of the papillae of the skin. The eruption generally reaches its acme about the fourth day and remains stationary for one or two days and then begins to decline. Its decline is marked by a dim-
-inution in the intensity of the color, it becoming paler and paler until it disappears. One of the peculiarities of Scarlatina is the non-abatement of the febrile symptoms after the appearance of the eruption. The febrile movement persists, and in some cases is augmented

The pulse is full strong and frequent, ranging very soon after the onset from 120 to 160, or even higher.

The appearance of the tongue during the progress of the disease is quite distinctive of scarlatina. At first the dorsum of the tongue is covered with a whitish or yellowish white coating of variable thickness, while its tip and edges are of a deep red color. The papillae of the tongue become enlarged and project through the coating, thickly studding it with numerous red dots. The coating in the progress of the disease exfoliates, and leaves the surface of the tongue clean and red. The tongue at this time presents the strawberry like appearance which is

pathognomonic of this disease
The throat affection in the mild cases
may not be a prominent symptom.
Though it is always more or less inflamed.
If examined the tonsils will be found
to be swollen and more or less covered
with a white or ash colored exudation.
This exudation differs from that which
characterizes diphtheria. It adheres less
closely, it is pultaceous, and cannot be
detached in strips. There may be
considerable pain in deglutition and
the voice may be nasal. The submaxillary
glands and the lymphatics of the neck
are frequently enlarged and tender
The urine presents the usual febrile
characters, it is diminished in quantity
and of high color

Stage of Desquamation

After the eruption has reached its height and remained stationary for a day or two it begins to decline, and with its decline there is an amelioration of all the symptoms. The febrile movement gradually abates. The pulse falls to its natural standard. The swelling of the tonsils & parotides disappears. Deglutition becomes easy, and the tongue returns to its natural state. At the time of the abatement of the symptoms desquamation begins. In the majority of cases this occurs about the sixth day. The cuticle is exfoliated either in form of minute branny scales or in pieces of epidermis of greater or less size. In two cases I have known the epidermis to be detached from the hands almost entire

The whole process usually occupies ten or twelve days, though it may be prolonged much beyond this time. The surface beneath the exfoliation is frequently left tender. Albuminuria is as frequently observed during this stage as in the preceding.

Having given the knowledge we obtained from books, lectures and clinical experience, sketched what we conceive to be the clinical history of Scarlatina of the mild form, cases in which the disease runs a regular course, that is without anomalous events or complications of any kind.

We do not purpose to give an elaborate description of those cases designated as "Severe Cases". Our communication has already extended to a certain length

than we at first proposed. Therefore in considering this class of cases we will only give a succinct account, Calling attention only to such symptoms as we conceive to be specially characteristic of this particular form of Scarlatina

Grave Cases. — These are usually characterized by the extreme gravity of the symptoms at the onset. Though cases do occur in which the symptoms are of a mild nature at first and afterwards are associated with those of a grave and malignant nature.

As a general rule the onset is abrupt the child passes rapidly from a state of apparent health to one of extreme danger. The fever is violent. The pulse is often so frequent as not to be counted

dis often irregular. There is great depression of strength. The skin in some parts is dry and burning hot; in other parts cool or even cold. Delirium is usually present from the first. Though there may be more drowsiness verging into coma. Convulsions are frequently present. The vital forces are overwhelmed. The eruption may be well marked, or it may appear in patches, or it may be almost entirely wanting. The throat affection is generally extremely severe. The tonsils may be excessively swollen. The cervical glands may be enormously enlarged and may be so extremely enlarged as to cause dangerous asphyctic symptoms. In some cases the breath emits an intolerable fetor. If such cases do not prove fatal at once and there is no favorable change

The patient grows weaker and weaker: Subsultus tendinum, and rigidity of the limbs make their appearance, the eruption becomes more livid, the pulse more frequent and irregular, the respiration is more embarrassed and the patient dies at last being completely exhausted. A certain percent of the cases of extreme severity recover, though this percentage is small.

Diagnosis

. All the symptoms present before the appearance of the eruption are so exceedingly fallacious that little reliance should be placed upon them in forming a diagnosis

The great frequency of the pulse, with excessive heat of skin, and soreness or redness of the fauces might lead us to suspect Scarlet fever. But it is better

to avoid expressing an opinion until the
eruption has made its appearance. Then with
this, and the concomitant symptoms, the
practitioner will rarely fail in making a
proper diagnosis. Scarlatina is to be
distinguished from Measles by the difference
in the prodromes, course, and eruption
of the two affections. The prodromic
stage of scarlet fever rarely lasts more
than twenty four hours and often not so long.
That of Measles on the contrary is seldom
less than three or four days. In Scarlatina
the eruption appears suddenly, usually on
the body first and then rapidly extends
over the whole cutaneous surface.
That of Measles usually appears first
on the face and then gradually extends
over the body. The eruption of Measles

occurs first in distinct papules which coalesce and form patches of an irregular crescentic shape. While that of Scarlatina is in the form of innumerable minute dots placed so close together as to give to a large portion a uniform color like that of blushing. The appearance of cerebral symptoms in Measles and their absence in Scarlatina. The presence of the Throat affection in Scarlatina and its absence in Measles are all diagnostic symptoms of great value.

From Rosiola it is diagnosed by the great difference of the temperature, in the two affections. The absence of the Throat affection in Rosiola, and the small amount of constitutional disturbance under discrimination easy

The following rules will serve to distinguish Scarlatina from Diphtheria

First in Diphtheria the eruption is (if present) very scanty. In Scarlatina the whole surface is covered. In Diphtheria if the eruption appears it will usually be on the third or fourth day. The eruption of Scarlatina nearly always makes its appearance during the first twenty-four hours of the attack. In Diphtheria the deposit in the throat is very tenacious and adheres closely to the mucous membrane. In Scarlatina the exudation is small in amount and is easily detached and shows no disposition to spread.

Prognosis

This will depend upon the form of the disease, and the age of the patient

In the "Grave" cases, and in young subjects the prognosis in the majority of cases is unfavorable. It may be stated that in mild cases recovery is the rule, and that in "Grave" cases it is the exception Violent nervous symptoms occurring early in the disease, Marked disturbance of the Muscular system; external, frequent pulse, intense heat or preternatural coolness of the skin, all indicate great danger. The sudden disappearance of the eruption (other symptoms not indicating improvement,) imperfect capillary circulation, Violent Vomiting, great Violence of the throat affection, and a disposition to the Typhoid state are omens that are extremely unfavorable.

Sequelae

Of these the most common and the most serious is Dropsy in some form. It occurs most frequently during the stage of desquamation Mild cases are almost as frequently affected as those of a severe nature.

Abscesses may form about the throat or other parts. Bronchitis and Pneumonia are rare. Peri and Endocarditis occasionally occurs. Diarrhoea is not infrequent and may be associated with complete deafness.

Treatment

This disease being self-limited in character violent and harsh methods of treatment are contraindicated. Therefore all perturbating remedies should be discarded. Many of the mild cases need little or no medication at all. In such cases a

careful hygienic management is all that is requisite. The patient should be allowed a bountiful supply of pure air. The temperature of the room should be carefully attended to. A range of temperature at from 68° to 70° would be proper. Care should be taken not to chill the body. This point cannot be too strongly urged, especially during the period of desquamation. By carefully protecting the patient from this influence one of the most potent of the sequelae of this disease may be avoided & attended to Dropsy.

But there are other causes that in addition to the means already attended to demand something more. The bowels if costive should be moved by a gentle

Laxitive. Nervous irritability should be controlled by the use of opium in some of its forms. Excessive heat of skin will demand refrigerants and antipyretics Here the influence of Quinia will be of great utility. It should be given freely. Its action may be aided by the use of some of the refrigerants. as Spts Nitros Ether. Citrate of Potash. and the Neutral Mixture. The morbid activity of the heart may be controled by the administration of Fleming's Tincture of Aconite. This will not only diminish the frequency and force of the heart; but it will also diminish the temperature It may be given in combination with the neutral mixture, and in some cases a very salutary effect is thus produced

Salicilic acid is another remedy that may be used with marked benefit. Chlorate of Potash may be used in all stages of the disease. Muriate Tinct of Iron combined with some of the remedies already named is highly recommended. "Carbonate of Ammonia is a remedy much relied on by some authorities. The two last named are more especially indicated in the grave forms of the disease. The burning irritation and itching of the skin will demand attention. Here inunction will give great relief. The application of Lard or as we believe better Glycerine and Cream will give great relief. They should be applied with the hand to the entire surface. The warm bath in small children will be of great utility.

Sponging the body with tepid, cool, or ice cold water may be resorted to. But in its application the practitioner must be guided by his own judgment. There can be no doubt as to the efficacy of the remedy, the throat may demand special attention. A solution of the Chlorate of Potash may be used as a gargle in children who are old enough to use it. Those who are too young may have the Chlorate rubbed up with a little sugar and placed upon their tongues. every two or three hours.

Alcoholic stimulants should be used if the vital powers are much oppressed

A

Thesis

on the

"Correlation of the Physical and Vital Forces":

By

E. A. Chancellor, M. D.

Va.

February 1877.

Correlation
of the Physical and Vital Forces.

In taking a retrospective glance over the broad field of medical science & arts, my mind is necessarily Engrossed with many thoughts of the wonderful advances made in the century which is about to Elapse in all branches of medical science & Seantology; but before commencing my introductory remarks based on this rapid progress, I would ask your indulgent Consideration & professional criticism on the theme which is my happy privilege to submit to the Honored & Sage Faculty of Maryland University.

Indeed, if called upon to select an Epoch of history distinguished above all others for the most extraordinary

and rapid progress in arts, sciences, literature, doubtless to the century that began with "Declaration of American Independence" should be accorded the unexampled preëminence. So great & astounding has been the increase of Knowledge in the crowding march of Events, that those who in the fulness of age were they now living, would exclaim that "all things has become new". New arts have been invented to subjugate nature more thoroughly to man, & sciences unknown before or only surmised have sprung to light with radiances of truth; one art has helped another & new sciences have issued like branches from Each stem. The lightning itself is controlled & glides harmlessly to Earth - way; Courier-like bears news abroad. The heavens have been search & gauged till

the "sweet influences of the Pleiades" stand confessed by science as by revelation. The physical structure of the sun remains no longer a mystery. The The teeming press now groans under such an accumulation of literary matter, that even an attempt to compile a catalogue of books that have been issued would baffle the most expert. This advance of knowledge has effected extensive changes in private & public life, in the Government of nations, in manners of individuals & the Economies & comforts of living. And now Encouraged by past success the present generation is prepared with matured Power & superior advantages to launch into the vast unknown. For though observers are everywhere, systematic workers plentiful Enough, how

fers of these one by men who are qualified for the task, by habits of study & Endowment of sufficient Genius & wisdom. Medicine, itself the summary of so many sciences (with which we are concerned) has always kept in advance of the Culture of the age, by men who possessed Energy of Character & persistency of purpose, for it is thus that the prosecution of the Enterprize has reached its acme; for it has been often said that "there is no royal road to Mathematics" & no triumphs of modern Engineering has converted that which leads to Eminence in medicine, into a "primrose path of dalliance": it passes through no bowers of Ease or "pleasing land of drowsy head & dreams that wave before the half shut Eye"; for like the Youth

Who bore the "banner with a strong device" they take Excelsior for the motto & press ever onward & upward unchecked by falling snows & yawning chasms & what they (some) deem more formidable yet, the syren voices of girlish & maiden beauty. Were we to blot out what Physicians have done in sciences, would leave a dreary chasm indeed, for they dug deep & brought up much gold & many precious gems; through their labors, during the century which is about to close, the world has been greatly Enriched by vast increase of medical knowledge & the wonderful triumphs achieved in the "Healing Art".

Nay; how often are the scientific labors of Physicians unrewarded by fame or worldly fame, whose noble privilege it is to obtain a surgeon, — Nay; a

god-like power to heal the sick & remove or
mitigate distress & anguish, thus they prevail on
the mission of mercy, on every shore, in every
land, upon the bosom of the mighty deep, still
with dauntless hearts contending the pestilence or
succouring the wounded & the dying amidst the
horrors of battle-field. To name them are words
be impossible, to think them over is only to bring
forth visions of the morn of the creation, when
the morning stars sang together & all the sons of
God shouted for joy. But some results of the
labors of these ~~ministering~~, ambitious & time-honored
Veterans will suffice it for us to pause, though
Many now liveth, yet others who have passed
away are only gone ahead, "death has no terrors

for those regenerated by Divine Mission since thro: ough his portals are the steps on which angels descend & ascend to lead them to Eternal life after times battles have been fought & won."

These original thinkers, first (as the world) found Anatomy which forms the true basis of all medical learning, already illustrated in its descriptive features; but it was reserved to them to originate the important Department of general anatomy, & with wonderful intellect to unfold the Comp= arative anatomy of a past & present creation.

By the aid of the microscope & organic chemistry histology arose to solve the mysteries of animal structure hitherto hidden for ages, to display the cell origin of tissues & the analyses of the Solids

& fluids; from these sources & experiments upon living animals, physiology is indebted for its present precision & Masterly demonstration; & it can no longer be said that though the human mechanism was known, the vital actions remained in great part unexplored. Morbid Anatomy had remained in almost impenetrable darkness when under the minute researches of immortable pathologist, it need an impulse to that magnificent Career it has since achieved. The labors of clinical observers, now rendered the more effective by the use of the Stethoscope, thermometer, microscope & Chemical reagents, together with the more recent inventions of ingenious optical instruments &

the Sphygmograph, have given to the diagnosis of diseases an accuracy unknown before, & with scarcely the Employment of a figure, it may be said, the various organs one interrogated, & Even the foetus in utero is made to respond. Symptomatology & semeiology have also acquired their true value, with the important announcement that opposite states & the affections of different organs may produce the same symptoms, & that diseases are to be verified not by symptoms alone, which refer to disorder functions, but by the process of Elimination & the physical signs cognizable to our senses. The Materia Medica having received for the first time a philosophical

arrangement, therapeutics was henceforth freed from the charge of mere Empiricism. But as much as has been since effected in this Department by study, the introduction of new & invaluable medicinal agents, such as the anaesthetics & Electro-therapeutics, the isolation of alkaloids & other active principles, & new modes of administering remedies as by the hypodermic method, cannot but constrain the confession that the knowledge of the action of Drugs is even now small compared with what has been done in collateral branches. This, perhaps, proceeds from the fact that therapeutics is not a science of simple & definite results, but one of

multiplied & varied relations. Now also began those scientific appreciations of the mechanics of labor & the vast improvements in its proper management which in great measure, have led to recent triumphs of Gynaecology. Of surgery little need be said, how to point to the valuable contributions to our text & Medical Journals. It is not necessary to dwell longer on this topic or advert to other important branches of our sciences - Enough has been said in these few, but feeble, preliminary remarks to give a glimpse of this "the noblest of professions, but the meanest of trades".

Time cannot fail me to dwell longer on this preface, for already it has reached its

anticipated length, & nor my modesty and diffidence forewarns me to proceed with the ~~theme~~ subject in question Eve some may think my introductory remarks ample for theme.

However imperfect & ill-performed my task may appear I could not better begin a thesis with a more firm & true basis than with the words of that most learned and Eloquent physician, Dr. James L. Isabell (Univ: of Va). "Whenever (he says) a given physical force is expended & seems thereby to have been annihilated, it is really converted into some other force wh. may be shown to be the exact Equivalent of that wh. has disappeared & to be capable under suitable

conditions of being changed back again into the same amount of the original force."
Thus, when either matter or force seems to be destroyed it is only changed from one form which may be visible to another wh. may be invisible; for solid & liquid matter may be changed into the gaseous & invisible form; & sensible motion may be converted into any of the varieties of molecular motion, but amid all possible changes the amt: of force remains absolutely & always the same. This mutual convertibility of forces is called the "Correlation or Equivalence of forces"; & the term "Conservation of Force" implies the persistence of the same amt:

under all the various transmutations wh: it may undergo. This great & important principle was thoroughly established by means of inductive observation & experiment was first announced by Julius T. Mayer, M.D. on a priori grounds. He considered it to be a necessary deduction of the axiomatic truth that an Effect is Equal to its Cause. In a chain of causes & Effects a term or part of a term can never become Equal to nothing, as plainly appears from the nature of an Equation. This principle is also applicable to the organic sciences, the vital forces being correlated with the Physical precisely as the latter are

correlated among themselves. This state=
ment does not involve the assertion that
there is no essential distinction between
physical & vital phenomena. There is a
fundamental & most Essential distinction.
Whenever any of the physical forces is convert=
ted into another mode of physical force
it requires a certain material instrumen=
tality to Effect the conversion.
Now in general such instrumentalities may
be artificially constructed by human agency,
the primary Elements of matter alone being
given. In like manner the physical forces
may be converted into vital force under
suitable conditions, but these conditions

are not, as in the former case, under Man's control. Such conversion can only take place under the influence of a living germ wh. now can not originate & wh. can only be derived by vital generations from a parent organism. But such a living Structure being given to start with, all the force expended in its subsequent development in maintaining a constant & Elevated temperature, & in representing various animal motions, is derived at Extra & results from the conversion of external physical forces into the peculiar vital Motions -

Dr. Mayer was first, undoubtedly, to

perceive this as a general truth.

Being at Java in the summer of 1840 he observed that the blood taken from the veins of some of his patients had a singularly bright red color; the fact riveted his attention. He concluded that a less amt: of oxidation suffices to keep up the temperature of the body in a hot climate than in a cold one. The darkness of venous blood he considered to be a sign of the amt: of oxidation that had taken place, & his mind at once grasped the principles that "the living body, notwithstanding all its Enigmas & wonders is incompetent to generate heat out of nothing"

But an animal organism not only

generates internal heat, but can also transform muscular power into external heat. "A blacksmith by hammering can heat a nail & a savage by friction can warm wood to the point of ignition. Unless, then, we give up the physiological axiom that the living body cannot create heat out of nothing; we are driven, says Dr. Mayer, to the conclusion that it is the total heat generated within & without the body that is to be regarded as the true calorific effect of the matter oxidized in the body. That a fixed relation subsists between heat & work is a postulate of the physiological theory of combustion"

"Dr Mayer therefore states it as an axiomatic truth that during vital process the conversion only, & never the creation of matter or force occurs" In the special application of this principle to the explanation of the visible movements of animals, he arrives at the conclusion that muscles derive their power of contraction from the liberation of force ab extra - "The muscle, he says, is only the apparatus by means of wh. the conversion of force is Effected, but it is not the substance consumed in the production of the mechanical Effect." It is to be compared to a steam Engine wh. consumes fuel ab Extra in order

to convert the force of heat into mechanical motion, & is far more Economical than any Steam Engine yet constructed by man; that is to say, more of the force is transformed into the desired form of mechanical Energy & less is dissipated in an unavoidable form as in the case of the muscle than in that of the most perfect Machine.

With reference to the action of the nerves on the muscles Dr Mayer says, As an Engineer by the motion of his finger in opening a valve or loosing a detent can liberate an amt. of mechanical motion almost infinite

as compared with its exciting cause, so the nerves acting upon the muscles, now unlock our activity wholly out of proportion to the work done by the nerves themselves.

Prof. Jos. Le Conte (Ca) makes some interesting & suggestive generalizations on this subject. He calls attention to the fact that there are four planes of material existence which may be represented as round one above the other. These are (1) the plane of elementary existence, (3) the plane of vegetable existence, (2) the plane of chemical compounds or mineral kingdom, (4) the plane of animal existence.

There is a special force whose function it is to raise matter from each plane to the plane above & to execute movements on the latter. Thus chemical affinity raises matter from plane (1) to plane (2); Vegetable Life-force raises matter from plane (2) to plane (3); & animal life from plane (3) to plane (4). But there is no force in nature capable of raising matter from (1) to (3) or (4) or from (2) to (4) without stopping & receiving an accession of force of a different kind on the intermediate plane. Plant can not feed upon Elements (No. 1) but only upon chemical compounds (No. 2). Animals can

not feed on minerals but only vegitable (Nos). This is a necessary result of the principles of Conservation of force; for it is only by the decomposition of minerals liberating chemical, that this force is in its latent state is rendered available into for transformation into vegitable life-force. In like manner it is only by the decomposition of its own structure & of its chemical complex food (albuminids & albuminids) derives the constructive force exhibited in its development from the ovum to the mature condition & in the performance of its various movements.

If force was originally expended in

the formation of organic compounds an Equal amount of force must be set free by their decompositions. If it requires a certain amount of force to raise a body from one level to a higher the same amount of force will be generated by the fall of this body to the original level. Now the food of animals is of two kinds, amyloids & albumenoids. The Carnivora feed Entirely on albumenoids & fats. The herbivora on both amyloids and albumenoids. The tissues of the animal are wholly albumenoid & require albumenoid food for their repair. The Amyloid food therefore must be used wholly for force, not exclusively heat, but heat & other modes of

of Energy. Thus according to Prof. Le Conte
all development takes place at the expense
of decay, all elevation of one thing in one
place, at the expense of corresponding
running down of something else in another
place. The plant draws its force from the
Sun & therefore what the plant gains the
Sun looses. Animals draw from plants
& therefore what the animal kingdom gains
the vegetable kingdome looses. An Egg, a
seed, or a chrysalis developing to a higher
condition & yet taking nothing <u>of Extra</u>
must loose weight. The amount of Evolution
is determined & measured by the loss in
weight. By the law of conservation of

force it is inconceivable that it should be other wise. "For these organisms can not directly convert the mechanical force into life-force. The mechanical force of heat decomposes chemical compounds + sets free chemical force &c: in the presence of an already living structure may then be converted into life-force. Matter lifted from plane (1) must stop at plane (2) before it can find the necessary force to lift it higher. As the matter of organized beings is not created by them but is only borrowed from the common fund to be restored at death, so also the organic forces cannot be created by organisms but must be

regarded as so much force abstracted from the common fund to be again restored in during the life of the organism & then returned at death.
part from time to time. But there is this marked contrast between the two Kingdoms of organic nature in their material & dynamical relations to the inorganic world: whilst the plant is constantly engaged in raising its component material from the plane of minerals or chemical compounds to a higher plane, by means of the power it draws from the Solar rays, the animal kingdom while raising one portion of these to a still higher level by the force developed by the descent of another portion to a lower level;

ultimately has drawn the whole of what the plant had raised, & in doing so, giving back to the Universe in the form of heat & motion, the Equivalent of the light & heat wh. the plant had taken from it."

The animal is therefore continually liberating force whilst the plant is Continually until it dies & decomposes, is storing up force for future beneficient uses.

× × × ×

My pleasant task is now about consummated, & in submitting it to the kind grace & indulgent ~~Inspection~~ perusal of those who have already Entered upon the drama of life & scaled the heights of the trophies of learning, I would solicit

a tender & modest criticism.

Very Respectfully,
Edw. A. Chancellor. (Va)

University Hospital,
Febry. 18th, 1877.

An

Inaugural Thesis.

On

Some Drugs which Induce Habits.

Respectfully Submitted

To The

Provost Regents and Faculty

Of The

University of Maryland

By

Jas. Conner Perkins Jr.

Of

Springfield Maryland

For Degree of

Doctor of Medicine.

March 1877.

In looking over the long range of medical science from the days of Hippocrates to the present time, we find but few if any topics bearing any relation whatever to the healing art which have not been fully discussed or at least they present that appearance to the medical student, who in searching for the subject of his theme almost despairs in the hope of finding something new.

Feeling that every idea advanced has had its due consideration, every point worthy of notice at all has been so impartially weighed and decided by masterly minds, every recess along the varied course of the science so thoroughly explored and explained; that the stu-

dent is left to one of two alternatives; either he must follow in the path of those who have preceded him and be subject to the accusation of plagiarism or attempt the advancement of new ideas and probably be termed whimsical.

But then in this the nineteenth century an age of advancement and improvement in nearly all scientific researches, we will probably not think it quite so difficult to find a field for investigation as did our ancestors of a few years since, when each disease had its specified remedy and each remedy its prescribed action; since however we may readily predict that routine practice will go to its grave with

the present century new roads for research will be opened up, problems will present themselves at every step, demanding explanation, each disease presenting new aspects and complications under new circumstances and taking a different course under the influence of newly applied remedies; so that each advancement in the medical science will open new fields for investigation and these through research and study will serve as stepping stones to higher planes; thus through ages to come link by link we trace the chain that binds into unity of action the laws which govern health and having thus

acquainted ourselves, we are prepared to detect any abnormal action of these laws and to apply the remedy. Before we can justly consider ourselves competent to apply remedies we must have a knowledge of the physiological action of drugs, we will be in danger of falling into the error which every student of the present day should make it a point to avoid—that of routine practice. We can only learn the action of medicines by our own observation and by the observations of others as taught by the books, the research seeming never to tire in its onward course or to end in its revelations, new drugs, and

compared being constantly introduced into the profession there is always new material for the speculation of the therapeutist.

There are many drugs however which for centuries have held prominent places in the profession and out of it not only for their value as therapeutic agents (they are inestimable however as such) but also for the peculiar influence they exercise over the organism in health. Such drugs as Hashish, Alcohol and Opium when present in the blood causes its normal action on the brain to be perverted, bringing about an intoxication so enchanting so fascinating in its exercise that the

study of their relative merits is of peculiar interest and is truly deserving scientific investigation. It is therefore to the credit of each drug, to their habitual use and to the dangers to be apprehended from their employment as therapeutic agents that we wish to speak more particularly.

Which ever of the drugs named is its characteristic influence on the brain each exciting it own peculiarities, yet considered as a group there is a similarity of action existing among them: they will each produce exhilaration of the spirits, excite the propensities, brighten the imagination, quicken the succession of ideas, cause an extraor-

agency of feeling and incoherence of thought; yet there is a difference in the intensity and to some extent in the character of the feeling caused by each; a difference that is worthy of consideration; in order therefore to compare the action of each it becomes necessary; so far as we are able to describe their action individually.

Beginning then with the consideration of Hashish I will not attempt to give its history, therapeutic application &c but merely its physiological effects as experienced by those who habitually use it. Its constant use is a habit confined almost exclusively to the inhabitants of the East, here among the

Arabs and Hindoos it is used to a very great excess for indeed it is excess when employed beyond its remedial influence they begin its use when young and keep up the indulgence through life as a harmless luxury. It is but moderately stimulant to the circulation producing but slight increase in the force of the pulse with little or none in its frequency. Upon the brain however it acts with great energy and like most stimulants it first exalts these damages and finally diminishes its function. The effect of a small dose therefore is to produce remarkable exhilaration of the spirits with a condition of mental [illegible], in

which a new state of existence seems to open, the most pleasing fancies present themselves and thoughts rush along in rapid succession without little guidance of the will. There is often a disposition to sing about, dance or to do some extravagant act and sometimes it betrays itself into a quarrelsome temper or deeds of violence, more frequently however there is experienced a quiet internal enjoyment which does not send any external expression. The last mentioned state is the one most frequently enjoyed by lovers of the drug, for drawing that the least offense as a harsh tone of voice, a seeming indifference or anything that is

not in just accordance with their
perverted ideas will excite them to
passions of anger they take the pre-
caution to exclude themselves from
all external influences before begin-
ning the dissipation. Owing to the pre-
caution thus taken the harshish ea-
ter is rarely excited to acts of violence,
his evil passions are seldom aroused,
and hence he terms the sensation one
of "real happiness": he claims it to be
truly moral and by no means sensu-
al. Very unlike that produced by alco-
hol. The feeling is not like that of the
gourmand or famished man when
satisfying his appetite but like one
who hears tidings which fill him with

joy like the miser counting his treasure, the gambler who is successful at play or the ambitious man who is intoxicated with success he is forgetful of time and to some extent of his surrounding. The past and present seem confused or confounded the minutes seem years and hours are of infinite duration. His ideas flow in easy and quick succession, his thoughts are rapid and incoherent and fancies painted in all the glowing colors of an excited imagination become the realities of his life. Notwithstanding this excitement to the imagination and feeling hashish seems rather to confuse than to

invigorate the mind and whilst the ideas excited are generally seeming they have no essential connection and lead to no special results. The fancy is filled with the wildest vagaries, the most fantastic images and the most gorgeous scenes raptuous to every sense carrying the soul along with them through periods of passive but diversified and thrilling adventure. Thus in a few hours a whole life has been lived, the excitement gradually subsiding the will coming again into exercise, reason regains her throne and the man has recovered from his debauch.

The after effect of hashish is said to

be of a very mild character, there is not that nausea and disgust that is apt to follow the influence of most stimulants; there is often a strong desire for food, and hence the drug is said to have the property of exciting the appetite. But how much of this desire for food is due to the action of hashish and how much to five or six hours abstinence with the blood in active circulation we leave to the consideration of experimenters.

Taking next into consideration the action of alcohol we begin to deal with the experience of many. While alcohol in its action produces an intoxication, it is almost peculiar to itself.

diffusion in some characteristics from that produced by Rosebird. Alcohol instead of acting principally on the moral feeling, and sentiments more commonly manifests itself in the excitement of the lower propensities.

Many men however are, under its influence more generous and conceding than in their perfectly sober condition, so that they are ready to grant favors and make agreements which their better judgment disapproves: a condition of which those who have a point to gain of them are not slow to take advantage. There are others however in whom the animal passions seem to predominate, these

are subject to an exhilaration from a very slight excitement is stimulated, this power of self government being at the same time weakened. They are subject to the control of any powerful passion that the slightest provocation may arouse. This state of feeling being gradually reached as there is no rapid transition between the sober and the drunken state, but a gradual weakening of the volitional control, a gradual increasing of the confusion of thoughts and a gradual augmentation in the turbulence of the passions in proportion as the alcohol in the blood tends more and more to hold on the brain. At this stage the government of

the will is completely overthrown and the excited passions rage uncontrolled. The man has subjected himself to the domination of his evil passions, so that his better nature loses its due supremacy and he becomes the mere instrument of insane impulses. Alcohol thus seems to excite the leading propensities, whether any particular desire is made more prominent by surrounding circumstances just at the time of the dissipation or whether it be the leading trait in the temperament of the one who indulges. The effects produced by an excessive amount of spirit is two

will [illegible] to warrant a description. There is always a corresponding mental depression to which there is generally superadded headache, nausea, lassitude, and general physical weakness which frequently lasts for days, totally unfitting the subject for the discharge of any duty which may devolve upon him. Finally this wearing off he becomes the possessor of his [illegible] judgment, capable of [illegible] the pro[illegible] of again indulging, but with perhaps far less power for resisting any demands his passions make upon him.

Opium exercises over the mind

a peculiarly enchanting influence, seeming to invigorate every faculty of the brain - except the will - it offers inducements which those who have once enjoyed it find difficult to withstand. Seemingly fatally to increase the reasoning faculties it is frequently called to the assistance of writers and speakers - they employ it to give brilliancy and rapidity to their thoughts - It is asserted more over that it is the imagination rather than the reasoning faculties which is excited by it. That the imagination is invigorated cannot be denied for many employ the drug for no purpose beyond this

It will not however create this faculty but only augmenting it when it exists, those contemplating the experiment of Opium eating should first be certain that they have an imagination to excite or they will probably charge the druggist with selling them an impure article or denounce what has been written by more intellectual unfortunates. But to the imaginative genius Opium is an assuaging balm, blotting out from the past all that would be forgotten, and expanding into huge proportions the bright or serene of bygone days, it sheds a halo of glory around the whole mortal past bringing into fanciful re-

tivity long buried beauties granting a respite from all the secret burdens of the heart it might be thought as De Quincey wrote - "thou only givest these gifts to man; and thou hast the keys of Paradise Oh. just, subtile and mighty opium!" Unfortunately for those who indulge, the invigoration of thought or fancy is greatly at the expense of the volitional powers; this is clearly shown by the following extract from the "Confessions of an English Opium-Eater" - De Quincey - he says - "The opium eater loses none of his moral sensibilities or aspirations; he wishes and longs as earnestly as ever to realize what he believes possible

and feels to be exacted by duty;
but his intellectual apprehensions of
what is possible infinitely outrun
his power not of execution only; but
even of power to attempt. He lies un-
der the weight of incubus and
night-mare: he lies in sight of
all he would fligh perform; just
as a man forcibly confined to his
bed by the mortal langour of re-
laxing disease, who is compelled
to witness injury or outrage offered
to some object of his tenderest love:
he curses the spells which chain
him down from motion: he would
lay down his life if he might but
get up and walk: but he is as pow-

erlers as an infant and can not even attempt to rise." Comparing then the drugs whose action I have attempted to describe we find that the main distinction lies in this; whereas alcohol in any form disorders the mental faculties; opium or hashish on the contrary (if properly taken) has a tendency to introduce among them the most exquisite order and harmony. Alcohol clouds the judgment and gives a vivid exaltation to the contempts and the admirations of the drinker to the loves and hatreds of all who feel its influence. Opium and hashish almost invariably communicate serenity, giving expansion to the heart

and benevolent affections. In a word then - the man who is under the influence of Alcohol is in a condition when the merely human and too often the brutal parts of his nature predominates but the opium or hashish eater feels that the divinor part of his nature is uppermost, the moral affections are stimulated and over all is the great light of unclouded intellect. Having then asserted that such drugs as Hashish, Alcohol and Opium are habitually used the world over, each nationality expressing its preference by the constant use of one or more of them - in which instance the habit is traditional - the question

arises. How is the habit otherwise induced.(?) Hereditary propensities no one will attempt to deny, the love for alcoholic stimulants and perhaps for others of the class we see manifested daily in the progeny of those who always indulged the taste; inheriting not only a morbid appetite but also an impaired and weakened volitional power, causing self-control to fall far short of resistence. Thus it becomes easy to explain how a large proportion of those addicted to the use of such drugs came by the habit. A transmitted temperament so impregnated with the stronger passions of the parent, require but

slight excitement to bring them into action and will really fail of rousing them the strongest propensities of the offspring. Happily however there are exceptions and many do not recognise such a legacy, others again who have not the privilege of shielding their weakness by a parents faults assume the easy task of cultivating an odious habit. It may be by way of experiment that the curious are led to indulge: to satisfy a desire to know the influence upon them of certain drugs which are reputed to affect one man in one way another in another way according to his susceptibilities or tempera-

ment. Others purchase finding that a narcotic will steal away pain or soothe a mental distress flies to it under the slightest physical or mental disorder and thereby finding more than relief the habit is soon confirmed.

Thus in one way or another through rational habits or private customs inherited propensities or social privileges the majority are probably led to partake. Unfortunately however there is another source from whence the habit sometimes arises, viz. from the employment of such drugs as therapeutic agents; though perhaps never intentionally so induced, the medical

man is not always excusable for such results from his advice; for in many instances their place could be supplied by less dangerous substances or their administration withheld, but often for want of discrimination their use is persisted in until there is little hope of persuading the patient that they are no longer called for. Knowing then the danger attendant upon repeated impressions from certain drugs, how exceedingly careful should the man be who assumes the responsibility of their administration. There are doubtless many instances in which it is necessary to use them boldly, regardless of the danger of in-

ducing habitual usage, than when the over cautious mother is placed in such circumstances he is more or less inclined to err in the other direction for he now instead of being discreet becomes timid and through his fear withholds a remedy. So that in presenting such points as these it becomes necessary so far as it is possible to study individual cases taking many things into consideration. But doubtless in the majority of cases it is better to withhold such remedies when it can be done prudently; for with many a morbid desire is so easily excited and so hard to control when once aroused, it seems

almost impossible to be too guarded in dealing out these substances which may possibly be laying the foundation for such a sad superstructure as a dissipated life. Entailing misery not only upon the one whose life though your advice has been thwarted but though him upon generations to come. Happily however the habitual use of drugs is less frequently attributable to professional advice than might generally be supposed; for it may be a question whether the faculties of a patient laboring under acute disease are so lastingly influenced by the effects of such medicines as are ordinarily used

habitually. Would it not be rational to suppose that whatever effect was produced by medicines prescribed to a patient while in such a condition would be so associated with the disease as to establish rather a distaste for the drug than otherwise?
It is more than probable that it is in convalescence when stimulants are used longer than they are required that the patient learns to love them or in chronic diseases when other drugs of the class are employed over a long period of time with a view to eradicating the morbid condition of the body while they really trust for it to the propensities and then

establish a condition of affairs equally deplorable and as certainly disastrous in its results. Then to know just when and how to employ such agents requires a discernment, a nicety of judgment that can only be gained by observation, by study and by experience and without one or more of these sources of information, the individual who goes forth to fight the ills of life does an injury to himself, to the human race and is but ill calculated to be the benefactor that he proclaims to be or but rudely prepared to do the good that all may reasonably expect.

Thesis

on

Coronation,

by

Charles J. J. Hicks

of Johnson County, Ga.

Class 76-7.

Craniotomy.

Craniotomy is an instrumental operation resorted to for the delivery of a fetus with an impacted head in a contracted pelvis. Nothing, in the whole range of Surgery, can be conceived of more trying to the nerves of the young surgeon, than when he feels, according to the best of his knowledge and skill called upon to perform this operation. However choste in language and classical in composition his authorities may be, when the duty befalls him to decide whether or not it is requisite to do that which he is justified

in, only by conventional law, he should not master his ignorance in technical terms and high-sounding phrases, but, with prompt memory, deep reasoning, and clear judgement, say if a human being is to be removed by his fund from existence to save the life of another who is bound to the world by many social, moral, and religious ties. It is said, we are justified in a political if not in a moral point of view, in preferring the preservation of the strong to the weak, the wealthy to the diseased, and the mother of a family to the unborn fetus. To ignore or slight the views and

opinions of such beacons of the profession as Cazeaux, Churchhill, and Ramsbotham, would indicate a total ignorance of the requisites of our science, which relies for its development upon the observations and energy of such good and learned votaries. Yet when it remains for the practitioner to decide and to act, I think it obligatory upon him to think long and much — to be satisfied beyond any doubt that he is doing that which can not be professionally avoided. "We should be conservative but not hidebound by authority."

We are occasionally obliged to resort to craniotomy from many

accidental causes, which are most immediate in their results; such as haemorrhage, convulsions, rupture of the uterus, and syncope, but we are by far more usually driven to the operation from disproportion between the pelvic head and the pelvic inlet of the mother, and this diminution in capacity is generally observed at the brim of the pelvis in the conjugate diameter. It is regarded as a principle, when the conjugate diameter is found to be less than three inches the transmission of the sterile ovum is impossible. Yet under such circumstances we have authority for

uniting as long as is at all consistent with the woman's safety, before we employ such deadly means. It is not absolutely necessary that the os uteri should be entirely dilated, but the wider the orifice is opened the less liability there will be of injuring that organ. The instruments to be employed in this operation are few and simple. When the Practitioner, without the usual instruments, is called upon to perform the operation, he, with great care, may use the bistury which no Physician is ever without, or he may use the common knife. Smellie's scissors is the instrument most

generally used hitherto; being so admirably calculated to penetrate the osseous vault and to enlarge the original orifice after having ruptured the contents of the cranium.

Prof. Tanier, the reviser and annotator of Cazeaux Midwifery, is of the opinion that the perforator invented by M. Hyppolyte Blot is destined to supersede Smellie's scissors, stating that it possesses all the advantages of the latter without its inconveniences. This craniotome is composed of two blades which cover each other, so that when closed the blunt edge of one extends slightly beyond the cutting edge of the other, and

naipsreally – rendering it harmless to the vaginal mucous membrane, or the fingers of the operator, on its withdrawal from the genital parts. Prof. Tanner sums up the principal advantages of the instrument as follows: 1 Great simplicity and solidity. 2 Introducing and withdrawing entirely safe, rendering it capable of being used by the least experienced operator. 3 Capability of acting by pressure, and with a single hand, the other remaining at liberty to guide the instrument, keep it in its place, and know what becomes of it during the operation. 4 Power of perforating the bones with the least

effort, and, consequently, with the least chance of slipping. 5th It is easily dismounted and cleaned. 6 Finally, simplicity of structure, rendering it a cheaper instrument than Smellie's scissors provided with their sheath. When the Physician sees that Nature in her efforts is unable to accomplish a safe delivery - when after having measured the diameters of the Pelvis, and the size of the fetal head he sees that the capacity of the canal to be traversed is inadequate to the transmission of the body traversing that canal, or if any of the grave causes mentioned requiring mechanical interference

it is his duty to solicit the aid of a
fellow practitioner, in order that his
views may be corroborated, and that
he may have competent assistance
in the operation, which he may pro-
ceed to perform as follows:
After the evacuation of the bladder
and rectum, with the patient ly-
ing in the usual obstetric po-
sition, and her or the folds of nap-
kins, or a piece of oil cloth placed
under her to catch the perhaps of
cerebral matter as they escape from
the vagina, the practitioner should
take his instrument in his hand
and coolly but quickly take away
the child. The first and middle

fingers of the left hand, previously oiled, must be carried far up into the pelvis until they reach the female hand, and their tips should be brought to bear forcibly against the most depending portion of the sacrum. The perforator, previously warmed and greased, should be directed along the groove of the two fingers until its point comes in contact with the head, then with a rapid semi-rotary motion should easily perforate the bone and enter the cerebral matter. The instrument should then be passed around the head until it has reached sufficiently far to bruise up the structures

at the base of the brain, as organic life seems dependent upon their integrity — should the fetus not die from loss of blood, when these parts are unbroken, with the principal portion of the cerebrum crushed to a pulp, it may come into the world crying and gasping for breath, which sight would look quite unsurgical not to say criminal. It is advised that a suture be sought for, or, preferably, a fontanelle to facilitate the entrance of the instrument, but it is not always possible to meet with these, On the other hand great care should be exercised not to injure the os uteri. The scalp

generally, offers very little resistance, yet it should be borne in mind that it is quite thick when an edematous swelling happens to be hit upon. Craniotomy is sometimes difficult on account of the mobility of the head which results from the instrument. In such cases an assistant should press upon the hypogastric region, holding firmly the head of the fetus against the superior strait. It would be necessary under such circumstances to guard against any awkward movement of the instrument which might result in serious damage to the mothers parts. It has been

remarked that it would be culpable negligence for the sacro-vertebral angle to be mistaken for the fetal head and the perforator plunged into it. In order to prevent such an error a point rather near the pubis is regarded as safest, the instrument at this point meeting the vault of the cranium perpendicularly. After the instrument has well entered the cranium the movable handle should be lowered in order to separate the the blades, which are next moved in every direction so as to brake up the brain throughout. To withdraw the instrument the blades

are allowed to come together. The opening in the bone may be enlarged, for the more easy exit of the cerebral matter, by placing the blades of the instrument in the orifice and separating the handles, as this readily cut the bone and scalp. Blood and cerebral matter follow the withdrawal of the point. It is more difficult to perforate the cranium when the foramen is small, but the same rules are to be followed as in the preceding case. There is some difficulty encountered in passing the perforator through the bones of the face. It should be passed

where possible through the forehead or directed into the orbit. When the lower portion of the face only presents the perforator may be passed into the mouth through the palatine arch and entered behind the nasal fossae. In cases of breech presentations, when the trunk is disengaged, and the head retained by a contracted pelvis, the perforation may be made through the occiput or one of the parietal bones. To facilitate the delivery water may be injected into the cavity of the skull to bring away in its reflux the greater part of the cerebral substance. This injection, which was so much

resorted to formerly, has given way to the many instruments which have been invented for crushing the head when deemed necessary. On the head being born it must be enveloped in a nap kin; and a continuance of our efforts may be required to extract the shoulders, which may be done by placing a tractor around the neck of the child and using traction in the direction of the axis of the pelvic brim: or it may be necessary to pass a small blunt hook under each axilla in turn to facilitate extraction; and sometimes even to perforate the chest or abdomen before delivery can be completed.

C. J. J. Hicks.

I have chosen Gentlemen for the theme
of my inaugural dissertation, a disease
and operation for the removal of which
has been known to the medical
[illegible] time immemorial,
[illegible]
for its removal, which in the infancy
of the noble profession was looked
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]. But [illegible]
in presenting this Thesis I am fully
[illegible]
[illegible]
of presenting before such an august

Faculty as the University of Maryland may
[illegible]
[illegible]
[illegible]
is that pathological condition commonly
known, & spoken of as stone in the bladder,
& its removal by that beautiful, & highly
scientific procedure, [illegible]
which I am glad to [illegible] after [illegible]
day is considered one of [illegible]
compared to what it was before [illegible]
of the great [illegible]
not only [illegible], but all the [illegible]
operations, painless, thereby leading to
much surgical investigation, [illegible]
But as ancient as the operation may be,
& as much as I have [illegible] subject,

of small dimensions, varying in size
from a grain of sand, [illegible]
frequently they have been found at
the post mortem so imbedded as to
give rise to no special symptoms during
life, but on the other hand it is quite
common for them to project into the
urethra, giving rise both to [illegible]
inflammation, in most of these cases the
sound will detect the obstruction
caused by the stone projecting into the
urethra, and a grating sensation will
be observed on passing the instrument.
The condition can also be diagnosticated
through the rectum; if one condition
should be required to be more [illegible]
calculi it should be done according

hundred, distinct calculi in the bladder at one time. A calculus generally weighs from two or three, drachms to an ounce, or two; this however may be greatly exceeded thus "Dr Morand states that he saw a calculus which weighed six pounds," Quingt that great dread which used to characterize the operation for the removal of stone, being put aside by the simpler modes of operating, and its fear banished by anaesthesia, thus making the proportion of large stones removed, very small compared with what it formally was, being removed now before they attain such a weight. The symptoms of stone in its commencement are [illegible]

bladder [illegible] to [illegible] out, the
patient kept quiet, and put on a [illegible]
[illegible], [illegible] these difficulties [illegible],
and the bladder is able to hold from
three, to six ounces of urine, the bowels
emptied of [illegible] matter & the [illegible]
well distended by urine in order to
give the sufficient [illegible] to [illegible]
the particles of crushed stone [illegible] &c
the subject being now placed upon
a firm table, his pelvis raised, & thus
separated, the instrument being chosen,
and the patient being put [illegible]
the influence of an anaesthetic, the
operation may be proceeded with.
The surgeon commences his work
usually with a Kris, & Thompson.

But the constitutional disturbances which often fall on the operation of lithotrity, are far from being slight, they are most apt to happen when there is a diseased state of the prostate, or kidneys, and the nervous phenomena are somewhat like those which follow the introduction of stricture instruments, only much more severe, another quite common result to be dreaded, are abscesses around the neck of the bladder, the result often proving fatal by pyaemia, complications however should be treated on general principles. After speaking thus on lithotrity, and seeing its advantages & disadvantages

with excellent results, I think
gentlemen that the three operations
which it has been my good [illegible]
to see, are sufficient to draw the
plain conclusions from, that the
operation of left-lateral lithotomy,
is as a rule accompanied by the
very best results, and ~~ought~~ should in
most instances be performed.
Finally gentlemen after [illegible]
of the two operations lithotity,
and lithotomy, I will now endeavor
to draw a comparison between them,
though hardly a comparison
I can call it, for the operations
lithotomy and lithotity, are so
different that a comparison can

Listen, we would most be very decided in favor of this operation, for according to Civiale's statements, out of 791 operations for the removal of stone by lithotrity, he had only 14 deaths, a report almost incredible, lithotrity often becomes impracticable, thus again the great Civiale states that out of 838 cases of stone, that applied to him only only 540 were operated on, and 290 of these were not operated on by lithotrity. I am strongly in favor of the operation of lithotrity unless there are some peculiar circumstances which would contra indicate its performance,

thus of third lithotomy, should
be performed when the patient
is very old, & the stone comparatively
small, and single, but in young,
and middle aged persons,
lithotomy is the operation which
ought to be selected, for in children
particularly when the urethra is
small, and the bladder unsound,
conditions which would render
lithotomy almost impracticable,
the urethra may be the seat of
structures, or the prostate may
be so enlarged as to prevent the
operation want of muscular
tone of the bladder, is another
objection to the performance of

utility, for the organ in such
cases does not possess the power of
freeing itself from fragments
of crushed stone, and their
presence would set up a
cystitis. Finally if the kidneys
are diseased as shown by the
presence of casts, or by the urine
containing great quantities
of albumin, in such cases
the mechanical irritation
set up by lithotrity ~~ought~~ should
be a serious objection to this
means of operating, lithotomy
therefore on account of the shortness with
with which it can be performed,
~~ought~~ should in such cases be chosen.

as it is performed at the present day with so much success in every particular, thus my preceptor has performed over seventy operations of lithotomy, and has not lost a single case, and I am sure after passing to that age of more advanced maturity, which generally brings to one wisdom, and discretion, I will be able to look back upon the operations of lithotomy which I have had the good fortune to see, with reminiscences of great pleasure. I would like gentlemen to continue on this the subject of

my Thesis but time admonishes
me and I must bring the
subject to a cover.

Acute Rheumatism.

Rheumatism is a term variously and vaguely used. It occurs in two or three forms, but classified as acute, subacute and chronic rheumatism. As the acute form is of main importance, it alone will be the subject of the following:

Rheumatism is a specific inflammation about joints, involving the fibrous tissues and attended with febrile disturbance, without urate of soda deposits and not tending to suppuration.

It not only affects the fibrous tissue about joints but affects to a greater or less degree that

tissues wherever found in the body and it seems to affect most and most frequent those parts of the body containing the largest quantity of fibrous tissue and which is most active, as the larger joints wrist, elbow, ankle and knee and the fibrous structure about the heart and lungs.

The symptoms vary according to the part affected and the way the attack begins, but in an attack of acute rheumatism when ever the attack begins the symptoms are simple and very striking. The attack varies in duration from two or three days to two or three

weeks, and may be followed by repeated attacks or may take the chronic form and last for months and years. The acute attack is ushered in by a chill followed by high temperature of 104 reaching as high as 105° F. and beyond, with no regularity of occurrence, but generally morning fall and evening elevation. There follows the febrile reaction. Pulse quick and bounding with localized pain in the joint affected, the wrist being a favorite location for a primary attack. The perspiration very profuse, acid acrid and a peculiar sour odor.

It marks no critical period as is often the case in other diseases in which it occurs as a sign. The sharp and lancing pain remaining the same after as before the sweating and often most severe at night. The tongue is covered with a thick creamy coat and may become dark brown. The bowels are most often constipated. The urine is high colored and scanty with a reddish deposit.

The pain and joint trouble seems to have an erratic and symmetrical tendency, wandering from one joint to another seems to fly around and affect similar joints

in regular order. Giving us the general law of symmetrical occurrence. The hip, vertebral and symphysis pubis are most often never affected; also the small joints seldom suffer. Delirium is not of very frequent occurrence, but when the fever is high- 105° 107° and even 110° F, it often does occur and if frequent in primary or even second any attacks, is to be regarded as a serious augury, and one of the most important signs in this brain bothering the anaemic manner and should be carefully watched for in every case. This is not due, as has been supposed to the alkaline treatment, but

rather to the action of the peculiar poison upon the blood itself.

The attack breaks up with a gradual and irregular cessation of all the symptoms. A stage of uneasy feeling, a partial loss of motion in the affected joint which as a general rule does not last long and is due to a relaxed condition of ligaments. As to the involved joint, its disturbance is most frequently noticed after the general symptoms have lasted for a time, but may be the very first thing to call the attention of the patient, and thus commencing with the local symptoms. During the attack the joint may

undergo no marked change
and then again may become swollen
inflamed, very painful even to the
weight of the cover. And upon the
cessation of the general febrile symp
toms leave the joint enlarged by the
exudation into the surrounding tissues.
But we most often find the stiff and
enlarged joints in the chronic form
of the disease.

Some of the causes. Like so many
other diseases rheumatism has a
hereditary tendency, and accord
ing to good authority the heredity
can be traced in some degree
in about thirty per cent of all
cases. Age and sex have some

incurable. It is a disease of young adult life, coming on usually between the ages of two and thirty five years, but at times observed on the very young. When seen in the age it is most often the chronic form. It seen on passing the age of thirty without an attack may reasonably suppose that he will never suffer from it. Males are more liable than females and this is perhaps due to the fact that men are more often exposed to the exciting causes than women. The exciting causes bring cold and dampness. The cold acts upon the surface, drying up the secretions suddenly or chilling the surface.

The exanthimas are also causes and we do have rheumatism following scarlet fever. It is also seen in gonorrhoeal inflammations and at times of the puerperal state. These are all remote as compared with what we will now give as the true, the real cause of the disease.

The lactic acid theory seems to come nearer yet than any other as being the true cause of rheumatism. There is existing in the muscles and as the product of muscular action. Sarco lactic acid and acid phosphate of potassium and if not allowed to undergo absorption a state of affairs is set up in the

a form which we call rheumatism.
The sarcolactic acid seems to be the
main factor in setting up this
condition. It is not yet known
what the true poison is, but that
it is an acid poison circulating
in the blood, there remains not the
slightest doubt, and the very fact
which seems to almost prove this is
that a treatment, such as the old
alkaline treatment, directed to an
acid in the blood gives the best
results of any yet instituted.
The complications of rheumatism
are numerous and important, so much
so, that some of them ought to be
considered as parts of the disease,

as much so as the joint affection. The essential characteristic of rheumatism is the inflammation of fibro-stricturis, hence the joints suffer most but the muscles, fascia and nerves also suffer at times. Among these the joints and then the heart suffers most and may be put down as being as frequently involved as any one joint. The heart is in constant motion thus simulating a joint and rendering it more liable during an attack of acute rheumatism. The endocardium and pericardium being fibro membranous either is almost equally liable to be complicated - the proportion being for endocarditis, twenty per cent and

that of pericarditis so frequent
no treatment being instituted.
The heart complication may occur
as the first and only local mani-
festation, and be one so grave as
to overshadow even the general
rheumatic attack. Most often we
find the heart trouble coming on
later in the disease, and the damage
being permanent disease of the
organ, as adhesions, valvular disease
with dilatation and hypertrophy.
While endo- and pericarditis are most
common, we also have as frequent
complications pleurisy, pneumonia and
bronchitis - and it sometimes that
pleurisy is the most frequent.

The temperature itself may be noticed at times as a serious complication and when reaching the elevation of 105°, 107° and even 110° F. may be regarded as a grave augury. Cerebral affection are most noticed when this complication of high temperature is present but at times appears even when no marked elevation is noticed and here we naturally infer that the fibrous structures about the brain and cord suffer also from the peculiar poison in the blood.

Of the morbid anatomy there is little to be said, except of the heart and joints. The affected joint is

swollen and inflamed. Synovial membrane more or less congested and excessive effusion of synovial fluid into the joint and exudation of serum into surrounding tissue. Owing to increased vascularity and nutrition with the other changes, the cartilage undergo change and become more or less enlarged. In complication of lungs we have the pleura inflamed, congested and an exudation of fibrine to a slight extent. Also in heart complications the pericardium is inflamed and reddened, thickened and exudation of fibrine which results often in adhesions. The

endocardium is likewise inflamed thickened to some extent and exudation of fibrine which often remains as vegetations on valves and other parts. (After death at times is found large fibrinous coagula in the cavities of heart and also the course of the larger blood vessels. The blood contains more fibrine than normal, the proportion in normal blood being three parts in one thousand and that of a rheumatic patient being five in one thousand. The number of red corpuscles is diminished to a very great extent. We find no uric nor lactic acid in the blood. The secretion from the surface is acid and

and pungent, but as in the blood no lactic or any other acid is found to any extent in the sweat. We find as the product of muscular action two substances of no little significance, sarco lactic acid and the acid phosphate of potassium. In the urine we find the urates and uric acid in solution before cooling, hence its high color. The specific gravity high, varying from 1030 to 1035, and leaving a reddish deposit on cooling. The joint involved, and especially after successive attacks, may become enlarged and stiff from matting together of the effusion and exudations, or from nutritive excitation, fatty degeneration set up

and end in suppuration.

Prognosis— The mortality of acute rheumatism is estimated at three per cent. but undoubtedly it destroys many lives by the heart diseases which are left after an attack. And this is to be taken into consideration of all cases of rheumatism. But the prognosis is generally favorable.

The Diagnosis of acute rheumatism is comparatively simple. however. there are some marked resemblances between this affection and the kindred affection known as gout. Some of which are necessary to be noticed. In gout the same kind of structure is affected and the true and essential

cause the same, an acid poison. but in gout this poison is known to us which is not the case in rheumatism. As respects the age, gout is of advanced age while rheumatism is of young adult life. The exciting cause of rheumatism being cold and dampness while that of gout hereditary and habit excessive indulgence in high living, drinking fine wines and the luxuries of life generally. The seat of the trouble being a marked diagnostic point - rheumatism in the larger joints, gout in the smaller. The profuse perspiration of rheumatism is not seen in gout. And finally, the deposit of urate of soda about the small

joints and the detection of the chyle in the blood establishes the absolute diagnosis between the two affections. A careless examination of a case of pyaemia might lead to a wrong diagnosis of a case of rheumatism. But in this affection the history alone is often sufficient. The tendency to suppuration. There is generally a surgical or other wound, the recurring paroxysms of sweating, and the peculiar sweetish breath of one suffering with pyaemia. What is under stood as the hypertrical joint may be taken for the affected joint in rheumatism; but the absence of heat redness and swelling, within the

effusion and exudation leave no doubt as to the proper diagnosis.

Treatment— Rheumatism is a remedial affection in that the attack is cut short, and the cardiac lesions warded off. It is said that if left untreated, an attack of acute rheumatism will get well of itself in six weeks. It is now almost perfectly proven that the essential cause of rheumatism is an acid poison circulating in the blood. This would leave us with but one mode of procedure and that to the neutralization of this acid poison and its elimination from the system. And for this reason, it

would seem that the old way of treating rheumatism with the alkalies - was the best and correct way. And experience shows that this is truly the best treatment and the best results have been obtained from the alkaline treatment.

The bicarbonate of potash seems to give the best satisfaction and should be given in large doses, kept up through the whole attack, increasing or decreasing the dose according to the state of the urine, which should be kept neutral or very slightly alkaline in reaction. In a solution of ℥i bicarbonate to the ℥i of water gives thirty grains to the tablespoonful, and one given

every three or four hours during the the day. Quinine should be given with this when the fever is high and seems to rise, in periods or any malaria is suspected. It should be employed in small doses which will also act as a tonic. Three grains given with the alkalies every three or four hours. In severe cases of high temperature and much febrile disturbance, it is best to employ with this alkaline treatment another treatment which has enjoyed a wonderful reputation of late years, that of the salicylates. The salicylic acid and the salicylate of soda. This treatment is inferior alone, in that it does not lessen our

ward off cardiac distress, and in that it debilitates the system. The good seems to be over balanced by the evil it does. However, we have in this an agent most powerful over the fever and pain attending rheumatism and should be employed only as directed against the temperature and pain. This remedy should also be given in large doses but should be discontinued after a certain time. The temperature and pulse falling very much in the course of thirty six hours, beyond which they should be stopped. The best mode of giving these two remedies, is to alternate them and

give thirty grs. of the bicarbonate of potash and in an hour and a half give thirty grs. of the salicylate of soda then the next hour and a half repeat the bicarbonate of potash and so on until the expiration of thirty six hours and then it is found best to discontinue the salicylate and keep up the bicarbonate according to the indications of the urine as before refered to.

If the salicylate fail and the fever persistent and runs very high, the antipyretic use of quinine is the only hope, and for this the hydrobromate in twenty minim doses by the hypodermatic method seems best.

The cold bath as a means of lowering temperature should never be employed in a case of acute rheumatism, as it often proves very dangerous. The severe pain is best controlled by the hypodermatic use of small doses of morphine often repeated. Antithrin is said to have some power as an antipyretic in rheumatism and has been employed. The local treatment deserves some consideration. The joint involved should be kept from the air by some kind of warm envelope. Flannel or cotton and this wrapped over with oiled silk and a bandage. When all inflammation has subsided and

the joint still remains swollen and infiltrated, it is in this stage that the employment of blistering is recommended. Several small blisters the size of a silver dollar and repeated from time to time with compresses, and this will very much facilitate indeed the effusions and exudations to be the more readily absorbed. This to be employed with passive motion in case of any stiffness.

Laurence Crain Stokes.
1886